Allergy Abstracts

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Allergy Abstracts

Asthma and Hay Fever

Experience in the Care of Asthmatic Patients Undergoing Operation. Based on 142 Cases. Prickman, L. E., and Gelbach, P. D.: M. Clin. North America **28**: 991, 1944.

Certain precautions should be taken before and after operations on asthmatic patients. Coughing and dyspnea are handicaps to surgical procedures in that the patients having these symptoms are unable to lie flat in bed. However, operations on the nose and sinuses, performed under local anesthesia, are well tolerated by asthmatic patients. Preoperatively and postoperatively, the cough should be controlled by elimination of the cause rather than by suppression with opiates. In cases of allergic asthma (extrinsic), the patients should have a complete allergic work-up preoperatively. All the offending allergens should then be eliminated. In the hay fever season the patient should be placed in an air-filtered room. Offending foods should be excluded from the postoperative and preoperative diet. Meals should be light, especially in the evening. Drug idiosyncrasies must be respected. Coughing is more easily controlled in those with sensitive asthmas than in those with asthmatic bronchitis or infectious asthma. Prolonged rest is a most important measure in these cases. Exertion, sudden changes of temperature, dust, and smoke should be avoided. Foci of infections in the sinuses should be eradicated before any general surgery is undertaken. Frequently, it is necessary to postpone operations on infectious asthmatics until warm weather.

In the present series of 142 asthmatic patients subjected to major surgical procedures, the incidence of postoperative pulmonary complication was relatively low. In 72 per cent of the patients in the series, the diagnosis was asthmatic bronchitis or infectious asthma; in 23 per cent, allergic asthma; and in 5 per cent, mixed asthma. In 15 per cent of the 142 cases, some form of pulmonary complication developed. Postoperative pneumonia occurred in six cases, atelectasis in six, and severe asthma in four. Of those patients who developed postoperative complications, 68 per cent were classified preoperatively as cases of asthmatic bronchitis or infectious asthma, 18 per cent as allergic asthmas, and 14 per cent as mixed asthmas. The incidence of pulmonary complications after operations performed on the upper part of the abdomen was twice that following operations on the lower part of

the abdomen. There were two deaths among the 142 cases, a mortality rate of 1.4 per cent. In the infectious types of asthma, spinal or intravenous anesthetics were preferred. Ether was avoided except where it seemed definitely indicated. Of 58 patients receiving ether in conjunction with other anesthetics, 10 (17 per cent) developed pulmonary complications.

A.

Bronchial Asthma as a Manifestation of Sulfonamide Sensitivity. Randolph, T. G., and Rawling, A.: J. A. M. A. **126**: 166, 1944.

Two cases of bronchial asthma following sulfonamide therapy are reported. In the first patient, status asthmaticus developed on the seventh day following sulfathiazole nasal therapy. There was no history of any previous allergic manifestations. A trial dose of sulfathiazole, administered after the patient had been symptom free for one week, resulted in a typical asthmatic paroxysm and a decrease in vital capacity. The second patient was an allergic individual who developed asthma on the first day of a second course of sulfathiazole therapy. An increase in the eosinophile count was noted in both cases twenty-four to forty-eight hours after taking the sulfonamide.

F.

Spontaneous Pneumothorax and Bronchial Asthma. Engelhardt, H. T., and Derbes, V. J.: Ann. Int. Med. **21**: 711, 1944.

The authors review twenty cases of spontaneous pneumothorax associated with bronchial asthma which have been recorded in the literature. In only two instances was the diagnosis verified by autopsy. In the case reported by the authors, three or four episodes of bronchial asthma had occurred during the eighteen months preceding the spontaneous pneumothorax. The patient died suddenly and the pneumothorax was present at autopsy. The mechanism of spontaneous pneumothorax is discussed.

H.

Some Clinical Problems in Bronchiectasis. Hinshaw, H. C., and Schmidt, H. W.: Dis. of Chest **10**: 115, 1944.

A plea is made for the early recognition of bronchiectasis since, in a reasonable number of these cases, the disease is curable by radical means. Chronic productive cough is a symptom of sufficient importance to warrant careful investigation. It should not be ascribed to "chronic bronchitis" or "sinusitis" until the diagnosis can be made by actual study of the sinuses and tracheobronchial tree by roentgenologic, bronchoscopic, and bronchographic means. Bronchiectasis of the upper lobe may be atypical, clinically and roentgenologically.

Patients with acute pulmonary infections should be followed roentgenologically until the lesion disappears.

H.

Role of Medicine and Surgery in the Management of Bronchiectasis. Alexander, J.: Ann. Int. Med. **21**: 565, 1944.

Three basic types of bronchiectasis are differentiated: first, cases with no obstruction of the larger bronchi; second, those with obstruction of the larger bronchi by fibrous stricture, growths, or tuberculous granulation tissue; and third, those with characteristic symptoms of bronchiectasis but no bronchiectasis, e.g., asthma. Types 1 and 2 may be differentiated by bronchoscopy. The third group may be diagnosed by lipiodal radiographic studies. Bronchial obstruction is the primary cause of bronchiectasis. Infection of the bronchial walls distal to the obstruction, resulting in atelectasis and occasionally in parenchymal fibrosis, constitutes an important secondary cause. Opinions differ as to the mechanism involved in the production of bronchiectasis by primary obstruction. Bronchial pneumonia, secondary to measles or pertussis, is the most frequent initial lesion leading to bronchiectasis. Congenital bronchiectasis occurs, but is relatively rare. The role of nasal sinusitis in the development of bronchiectasis is not clear. Bronchiectasis rarely develops in an uninvolved lobe even in the presence of persistent sinus discharge. In bronchography, oil instillation into all five lobes is imperative. There is a contraindication to oil instillation for a three-week period following a pulmonary lesion associated with fever. Lobectomy is a safe procedure but only 50 per cent of patients with bronchiectasis are suitable for operation. Postural drainage every two to four hours and bronchoscopic drainage is recommended for the others. Chemotherapy has been of little value. Nose and throat infection should be treated despite the fact that no case has been cured or improved by radical sinus surgery. Radiotherapy and induced pneumothorax are not recommended.

H.

Allergic Rhinitis and Asthma in Hawaii. Young, C. T., Cook, W. R., and Kawasaki, I. A.: War Med. **3**: 282, 1943.

One hundred fourteen cases of exogenous asthma, 51 of endogenous asthma, and 57 of allergic rhinitis were studied at the hospital clinic of Oahu. The dust on this island showed an extremely high content of pollen and algerobia. Damp, rainy weather, high humidity, and low altitude are factors which have an important influence on pollination on this island. Heavy pollens which may be of clinical importance are careless weed, koa, coconut, and royal palm. Clinically, algerobia and grass pollens are the most important. No ragweed has been found on the island.

H.

Allergy from Timbó (Lonchocàrpus H.b.k.). Report of a Case. Oliveira Lima, A.: J. Lab. & Clin. Med. **29**: 939, 1944.

Derris (cubé) and Lonchocarpus (timbó), both plants of the Leguminosae family, are now being used as insecticides. A case with both bronchial asthma and contact dermatitis caused by timbó is reported. The patient, who had a positive personal and family history of allergy, developed nasal and bronchial symptoms five months after beginning the regular use of insect spray containing timbó. Contact dermatitis developed at the same time. Scratch and passive transfer tests were positive with both Derris and timbó. Patch tests were positive with the resinous constituents of the plant. Incomplete animal experiments indicate cross reactions between Derris and Lonchocarpus.

H.

Dermatology

Dermatophytosis in Industry. Peck, S. M., Botvinick, I., and Schwartz, L.: Arch. Dermat. & Syph. **50**: 170, 1944.

The purpose of this study was to investigate the incidence of dermatophytosis in industry in order to determine whether it is spread in industrial shower rooms and locker rooms, whether its presence predisposes to the development of industrial dermatitis, and whether the differential diagnosis between dermatophytosis and industrial dermatitis of the hands could be easily made. Examinations, consisting of clinical observation, culture studies, and trichophytin skin tests, were made on 1,393 men and 730 women. Clinically, the subjects were classified as 27.79 per cent positive, 33.63 per cent doubtful, and 38.57 per cent negative. Cultures were made on 819 workers and were correlated with the clinical studies. The results indicated that a number of patients in the clinically doubtful group had dermatophytosis. Clinically, the incidence of dermatophytosis rose sharply during the winter months. The pathogenic fungus most often found in the culture studies was *T. gypseum* and, less frequently, *T. purpureum.*

Various types of shower room flooring were investigated as a possible source of infection. It was concluded that concrete or pine wood flooring is not an important source of fungous infection of the feet and that copper-impregnated concrete flooring is of no value in preventing the spread of fungous infections.

In trichophytin tests made on 776 workers, the incidence of positive reactions was 42.53 per cent. The test was more often positive in individuals with clinical evidence of dermatophytosis than in those who were clinically negative. Contrary to popular opinion, dermatophytosis did not appear to be a predisposing cause in industrial dermatitis. The incidence of fungous allergy in industry and its relation to occupational dermatoses was measured by the trichophytin test. It has

previously been shown that 80 per cent of all industrial dermatoses are due to primary irritants and only about 20 per cent are caused by sensitizers (allergic dermatitis). Since 1 per cent of all workers have occupational dermatoses, only 0.2 per cent have allergic occupational dermatosis. Since in the present studies 42 per cent of the workers examined showed hypersensitiveness to fungi, it would appear that, if fungous allergy did play a role in the development of allergic contact dermatitis, it would be a minor one. Open lesions are considered a predisposing cause of occupational dermatitis and fungous infections may act by virtue of this property rather than by their ability to sensitize. Sixty-eight patients with tetryl- and trinitro-toluene-dermatitis, a typical allergic contact dermatitis, were tested with trichophytin extract and failed to show a higher incidence of positive reactions than that found among 776 persons in various occupations. It was concluded that the occurrence of allergy to fungi does not bear any relationship to susceptibility to allergic contact dermatitis.

A.

Cholinogenic Urticaria and Cholinogenic Itching. Nomland, R.: Arch. Dermat. & Syph. **50**: 247, 1944.

Four patients who suffered from itching following exercise, emotional stress, or exposure to heat were studied. In only one of these individuals did urticaria accompany the itching. Hopkins and his coworkers have previously described the above syndrome associated with urticaria as "cholinogenic urticaria." Grant, Pearson, and Comeau demonstrated this type of urticaria to be different from other physical urticarias in that the attacks could be produced by the injection of acetylcholine derivatives. The acetylcholine is said to act through the parasympathetic nervous system to release H-substance which produces the urticaria. Pilocarpine also produces the urticaria. In the three patients who had generalized itching induced by effort, emotion, or heat, the attacks differed somewhat from those in the fourth patient, in whom these symptoms were associated with urticaria. In the itching group, the spontaneous attacks came on more quickly, were more acute, passed off more rapidly, and were accompanied by a slight transient erythema of the skin without whealing. In both cholinogenic urticaria and cholinogenic itching, mecholyl chloride induced attacks identical with spontaneous ones. The urticaria following mecholyl administration was manifested in about ten minutes after the injection and several minutes after the normal physiologic action of mecholyl appeared. The theory of Grant that mecholyl acts on the parasympathetic nerves to release H-substance and thus produces urticaria appears tenable for cholinogenic urticaria. It is not satisfactory in explaining the symptoms in the cholinogenic itching group, since, in these cases, the induced attacks come on two minutes or less after the

injection of mecholyl, before a physiologic effect such as sweating is produced and are not followed by urticaria. The author concludes that, in cholinogenic itching, the acetylcholine derivatives must have a direct action on the cholinergic nerves of the skin and, in some unexplained way, produce itching. No theories have been advanced as to why some people react abnormally to a physiologic substance such as acetylcholine.

A.

Allergic Occupational Dermatitis in Our War Industries. Schwartz, L.: Ann. Allergy **2**: 387, 1944.

Chemicals causing occupational dermatoses may be divided into primary irritants and sensitizers. Primary irritants have a definite chemical or physical action on that part of the skin with which they come in contact. Primary irritants may also be sensitizers.

Allergic dermatitis occurs only as a result of an induced generalized sensitivity following a period of exposure to a substance which is not a primary irritant in the concentration to which the exposure occurs. The percentage of individuals, who become sensitized to a chemical, is directly proportional to the degree of exposure. Allergic dermatitis is often followed by tolerance, especially if the contact with the excitant is continued for a sufficient period. Tolerance may also follow recovery even though the recovery occurred after contact with the causative agent has been discontinued. Continuous exposure, however, is required to maintain tolerance. Instances occur where tolerance is suddenly lost. This is probably due to a breakdown in the immunity mechanism. Abrasions of the skin surface, deficient glandular secretions, and thin epithelial layers result in breaks in the defense mechanism which make it easier for allergens to enter and cause sensitivity. Generalized dermatitis may also occur when the excitant enters through the gastrointestinal or respiratory systems and is deposited in the skin.

Explosives are the most frequent cause of allergic dermatitis in the war industries and are listed in the order of their importance: tetryl, TNT, fulminate of mercury, ammonium picrate, and the explosive known as R.D.X. Cutting oils are usually primary irritants but they sometimes contain phenolic amines which may cause sensitization. Other causes of allergic dermatitis are rust preventatives, cobalt, resins, oils (especially fish oils), potassium bichromate, and synthetic resin glues. Some of the chemicals used in the manufacture of Buna S (synthetic rubber) are sensitizers and certain of them are also photosensitizers. The dyes and chemicals used in the special treatment of various fabrics for the armed forces are frequent sensitizers. Tolerance develops in most workers suffering from allergic dermatitis if proper treatment is carried out while they continue their work.

F.

Clinical Evaluation of Soy Bean Food in Eczema of the Child. Stoesser, A. V.: Ann. Allergy **2**: 404, 1944.

The external treatment of eczema in infants and young children has not been very satisfactory. When external therapy is combined with dietary management, the percentage of good results is increased slightly. An investigation was conducted in order to determine the beneficial effects of a carefully controlled regime. Thirty-seven eczematous children were placed on a standardized form of external therapy and the whole milk in their diets was replaced by a soybean formula. Twelve patients were sensitive to milk; the others, to various other foods. Eight of the children could not tolerate the formula. In the remaining twenty-nine cases, ranging in age from 2 months to 2 years, nutrition was well maintained on the formula. Eighteen of these patients had good results and eleven fairly good results after only a short period on this regime.

F.

Dermatitis From Lemon Grass Oil (Cymbopogon Citratus or Andropogon Citratus). Mendelsohn, H. V.: Arch. Dermat. & Syph. **50**: 34, 1944.

A study was made of eight men who developed dermatitis from six to eighteen days after starting to work as machinists, carpenters, or riggers on a boat recently returned from India. Three men had had similar attacks two months previously while working on another boat which had arrived from India. The lesions involved the face, forearms, and ankles and, occasionally, the penis, scrotum, and thighs. Investigation revealed that there were tanks of lemon grass oil in the cargo. Lemon grass is a fragrant East India grass and its oil is used in the manufacture of cheap soaps. Samples of the oil could not be obtained for patch testing, but a piece of pine wood which was soiled with the oil was used instead. Patch tests were made with the soiled wood on four patients. Tests were also made with nonsoiled pine wood, motor oil, Diesel fuel oil, and other substances encountered in the patients' regular work. Positive patch tests were obtained in each patient tested with the soiled wood. It was concluded that lemon grass oil is a primary irritant and a strong sensitizing agent.

A.

Severe Urticarial Reactions Due to Pooled Human Plasma. Dickstein, B.: Ann. Allergy **2**: 327, 1944.

A severe urticarial reaction following the administration of pooled human plasma occurred in a patient who gave no previous history of allergy. The patient was found to be skin-sensitive and showed reagins for many foods, including milk, beef, and lamb. Direct and passive

transfer tests demonstrated that the patient's sensitivity was limited to the plasma he had received and not to other human plasmas. This case is presented as an instance of a reaction resulting from food allergens in blood plasma administered to a sensitive patient. It is not considered one of sensitivity to plasma per se.

F.

Otorhinology and Ophthalmology

Pathologic Changes in Sinusitis. Brown, H. A.: Proc. Staff Meet., Mayo Clin. **19**: 468, 1944.

Ten to 20 per cent of all cases of empyema of the maxillary sinuses result from dental infections. Chronic sinusitis may develop from a single acute infection, provided that the inflammatory reaction is sufficiently severe to bring about an irreversible reaction in the mucous membrane. Most chronic infections, however, develop from repeated acute infections. The general predisposing causes of sinusitis, which are not well understood, include poor hygiene, inadequate diet, allergic states, and endocrine or metabolic disturbances. Acute infection of the sinuses may be edematous or suppurative. Chronic changes involving the sinus mucous membranes may be suppurative, hyperplastic, allergic, or combinations of these types. In chronic hyperplastic sinusitis, the characteristic finding is polypoid hyperplasia of the mucous membrane. Exposure of the sinuses does not disclose pus. In allergic sinusitis the mucous membrane is similar to that in the hyperplastic type except that it is paler, more edematous, and contains numerous eosinophiles.

C.

Symptoms and Methods Employed in Diagnosis of Sinusitis. Thorell, W. C.: Proc. Staff Meet., Mayo Clin. **19**: 470, 1944.

Headache is the predominating symptom in acute sinusitis, but is the exception rather than the rule in chronic suppurative sinusitis. In chronic hyperplastic sinusitis, in which nasal polyps are associated with infection, headache may be present and may be referred to any region about the head. Nasal or postnasal drainage of a purulent or mucopurulent character is the predominant symptom in most chronic infections of the sinuses. This symptom may be lacking in many cases of acute sinusitis during the congestive stage. All patients with postnasal drainage are not suffering from sinusitis. In many cases this condition can be explained on a physiologic basis, or by the presence of pathologic conditions in the pharynx. Transillumination of the sinuses is not routinely used as a diagnostic procedure because of anatomic variations of the sinuses which may be present. Negative findings are more significant than positive ones. The roentgenogram

is an important aid in the diagnosis of sinusitis. Its greatest value lies in its ability to reveal the anatomic arrangement of the sinuses. Probing, cannulization, and lavage are contraindicated in acute infections.

C.

Roentgenologic Aspects of the Paranasal Sinuses. Hallberg, O. E.: Proc. Staff Meet., Mayo Clin. **19**: 472, 1944.

When should a patient be referred for roentgenologic examination of the sinuses? He should be referred: (1) when definite manifestations of sinus disease, such as external fistulas, are present; (2) when he gives a history of recurrent bouts of acute sinusitis which suggests chronic sinus involvement; (3) when the patient insists he has chronic sinus disease because of a morning postnasal drip; (4) when pathologic changes in the nose are found or when sinus surgery is contemplated; (5) when the patient has certain pulmonary conditions, such as chronic bronchitis, bronchiectasis, or bronchial asthma; and (6) when the presence of a benign or malignant neoplasm is suspected. Roentgenologic findings attain their true value only when they are correlated with the clinical findings. From roentgenograms alone, it is impossible to distinguish between active, healed or quiescent sinus disease.

C.

The Treatment of Sinusitis. Williams, H. L.: Proc. Staff Meet., Mayo Clin. **19**: 474, 1944.

The object of both medical and surgical treatment of sinusitis is, inasmuch as possible, to restore normal function. Destructive treatment should be avoided whenever possible. In acute sinusitis, the relief of pain in the early stage is usually of primary consideration. Roentgen therapy has been found to be the best single treatment for the relief of the intense pain in the engorgement stage of acute sinusitis. Sulfonamide therapy is useful in the acute stage before a collection of pus inhibits the action of the sulfonamides. Traumatizing manipulations are to be avoided. It must be remembered in using vasoconstrictor agents for any nasal condition that, although the primary constricting action is temporary, the secondary edema which follows is much more persistent. Cocaine, camphor, menthol, and essential oils should be avoided in the treatment of acute sinusitis. In the suppurative stage of acute or subacute sinusitis, the use of the Dowling pack, followed by gentle, interrupted suction, is helpful. In chronic sinusitis, treatment is usually surgical. Care should be taken to preserve the mucosal lining of the sinus as far as possible. Fundamental nasal allergy on which a secondary sinusitis has been grafted presents a special problem. Relief will not be obtained in such cases

until the necessary surgical procedures are combined with adequate and intelligent treatment directed toward relieving the fundamental functional disorder of the affected mucous membranes.

C.

Miscellaneous Allergies

Allergic Headache—An Unusual Case of Milk Sensitivity. Randolph, T. G.: J. A. M. A. **126**: 430, 1944.

The patient, a 24-year-old nurse, complained of headaches beginning at the age of 14 years and becoming progressively more severe. Histamine diphosphate in high dilution produced violent headaches. Surgical section of the right middle meningeal artery gave only temporary relief. Intracutaneous food tests were negative. On a diet eliminating cereals, meats, eggs, legumes, citrus fruits, chocolate, nuts, condiments, and milk, improvement was noted on the fourth day. Two weeks later, a single glass of milk at breakfast failed to produce any symptoms, but a second glass at noon was followed within forty minutes by severe headache and semiconsciousness. Beef, chocolate, tomato, and grape juice also produced mild headaches. Butter and cheese, which were originally tolerated, soon began to produce headaches. Working in the nursery preparing the evaporated milk formulas began to cause vertigo, severe headache, stupor, and, at times, urticaria. To determine the extent to which psychogenic factors were involved, a dilute amphojel solution resembling milk was given. In forty-five minutes the patient developed mild twitching of the right upper lid with nausea lasting twenty minutes. Ninety minutes later she was given 1 c.c. of milk in 100 c.c. of water. In ten minutes, a throbbing right temporal pain developed and was accompanied by attacks of semiconsciousness and marked fatigue. An intracutaneous test with milk, though negative, was followed in ten minutes by flushing and itching of the face and neck which then became generalized and was followed by dizziness, severe right frontal head pain, and semiconsciousness. After the disappearance of the headache, the intracutaneous skin test area became mildly pruritic and then developed an erythema which reached its height six to seven hours after the test. No wheal was observed at any time.

F.

The Therapeutic Use of the Amino Acid Histidine in Allergy and Shock—"Histidine as a Factor in Histamine Epinephrine Balance." Ruskin, S. L.: Am. J. Digest. Dis. **11**: 209, 1944.

In normal individuals, the histamine and adrenalin systems are maintained in balance. When histamine is inadequately opposed by adrenalin, an overaction of the histamine mechanism occurs, similar to that

which follows sympatho-adrenalectomy. The antihistamine action of ephedrine, calcium, sodium, benzedrine, and their ascorbic acid salts was studied on cross sections of rabbit bronchiole tissue. Epinephrine ascorbate possessed the greatest bronchiole-dilating and antihistamine capacity of the various substances studied. From the experimental evidence it appears that ephedrine, calcium, and benzedrine are actually bronchiole constrictors. Vitamin C, by itself, seemed to have a slight histamine antagonism but, when combined as the acid radical with any of the substances tested, it enhanced the histamine antagonism and bronchiole-dilating capacity of the substance. On the basis of these findings, the author concluded that histidine could be used clinically for its antihistamine effect. Histidine, although the precursor of histamine, is antagonistic to it and can be used to reduce histamine overaction. Four per cent L (+) histidine monohydrochloride and calcium ascorbate were administered along with desensitization treatment to a number of patients presenting various allergic conditions. Relief from symptoms was noted with each of these medications, but the results were better when the histidine and calcium ascorbate were used in combination.

F.

Allergy to Penicillin. Criep, L. H.: J. A. M. A. **126**: 429, 1944.

At the onset of a second course of penicillin therapy, begun ten days after the completion of the first, a generalized urticaria developed immediately. The lesions were present for six days while the drug was given. The patient gave no family or personal history of allergy. Direct and passive transfer tests with penicillin were positive. An attempt was made to sensitize two guinea pigs with intravenous injections of the patient's serum. Twelve to twenty-four hours later, the animals were tested intravenously with penicillin. No evidence of anaphylaxis was noted. Precipitin tests performed with the patient's serum were positive. Skin tests with Penicillium extract were negative.

F.

Diffuse Glomerulonephritis Following Revaccination for Smallpox. Herbut, P. A.: Am. J. Path. **20**: 1011, 1944.

Diffuse glomerulonephritis following smallpox revaccination is rarely encountered, and a fatal case with autopsy findings has never been previously reported. The patient, a 64-year-old white laborer, was revaccinated after an interval of thirty years. One week after revaccination, the patient complained of pain in the lower back. At this time, there was a marked reaction at the site of vaccination and a few scattered pustules on the skin of the same arm. The blood pressure was elevated and the urine showed heavy traces of albumin,

granular casts, red cells, and white cells. The patient became progressively worse, developed uremia, and died thirty-seven days after the vaccination. The autopsy findings showed a diffuse glomerulonephritis with massive hemorrhages into the calices and pelves of the kidneys, the upper halves of the ureters, and the bladder mucosa. There was also evidence of severe necrotizing arteriolitis, which probably accounted for the massive hemorrhages. The author favors the theory that diffuse glomerulonephritis is an allergic response of the kidneys to some toxin. He believes that the revaccination produced an allergic reaction in the urinary tract. He refers to a number of reports in the literature dealing with various allergic reactions after smallpox vaccination.

A.

The Production of Skin Sensitivity. Dowdeswell, R. M.: East African M. J. **21**: 111, 1944.

Attempts were made to produce artificial skin sensitivity in humans to various pollen extracts and to antigas-gangrene serum. Ten normal individuals, Africans and Europeans, were employed in the experiments. All had negative personal histories of allergic manifestations but two had positive family histories. Two methods of sensitization were used. The first consisted of the direct application of pollen extract to a denuded skin site about 1 sq. cm. in size. Denudation of the epidermis was effected by the application of pure phenol. The second method of sensitization consisted of the intracutaneous injection of 0.05 c.c. of extract. The antigens employed were extracts of Cynodon grass pollen, pyrethrum, Bignonia pollen, and antigas-gangrene serum. Skin sensitivity, which at first was localized, usually became generalized following prolonged exposure. The degree of sensitivity and time required for sensitization depended upon the concentration of the extract and the nature of the antigen.

A.

Allergy in Relation to the Genitourinary Tract. Thomas, J. W., and Wicksten, V. P.: Ann. Allergy **2**: 396, 1944.

Allergic reactions may occur in the genitourinary tract but they are not common. The diagnosis is usually made by the elimination of other possibilities. There is considerable experimental evidence of allergic reactions in the bladder, uterus, and kidney of sensitized animals. Enuresis has often responded to antiallergic treatment. There are many reports in the literature describing allergic reactions in the various organs of the genitourinary system. The common symptoms are frequency, burning, tenesmus, nocturia, enuresis, colic, dysmenorrhea, leukorrhea, and vulvar irritation. If the clinician is allergy-minded, the diagnosis can frequently be made. Skin tests, elimination

diets, and therapeutic tests with epinephrine are of value in making the diagnosis. A family history of allergy is frequently present. A number of case reports are presented. Foods, especially wheat, eggs, and milk, were found to be the most common offenders. Inhalants and drugs may also be offenders. Treatment consists of administration of epinephrine and the elimination of the etiological allergens.

F.

Impaired Nutrition in Allergy. Ballestero, L. H.: Semana méd. **25**: 5, 1944.

The author discusses impaired nutrition as an allergic manifestation and presents case histories to illustrate his points. He is of the opinion that impaired nutrition is present to a variable degree in all allergic patients, particularly in asthmatics. In 3 per cent of children under 15 years of age, he found a 10 per cent decrease in stature, and about one-third of them were at least 15 per cent underweight. In 12 per cent, there was a marked loss of weight at the time of allergic symptoms. The impaired nutrition may be a more important consideration than the other allergic symptoms. It may be the only manifestation of allergy. Allergic patients may be as much as 50 per cent underweight. Their stature tends to be normal and they may even be taller than normal. The thoracic malformation of asthmatic patients is characteristic. The loss of fat tissue is more pronounced in the thorax than in the abdomen. Under the proper antiallergic regime there is marked improvement in the patient's nutritional status.

J. L. Cortes.

Anaphylaxis

In Vitro Anaphylactic Response to Polyhaptenic and Monohaptenic Simple Antigens. Campbell, D. H., and McCasland, G. E.: J. Immunol. **49**: 315, 1944.

Simple polyhaptenic antigens containing the same haptenic group vary considerably in their serologic reactions with antisera. The in vitro anaphylactic response to these antigens was investigated to determine whether the same relative differences and similarities occur in their anaphylactic-producing qualities.

Guinea pigs were sensitized either actively by injections of azoproteins or passively by the injection of guinea pig, or rabbit, antisera. Sheep-serum-azoprotein and ovalbumin-azoprotein produced the best results. The intestinal strips from sensitized guinea pigs were suspended in a specially modified tissue bath which could be easily washed. Each antigen was tested on several strips from the same animal. A strip which reacted once to a polyhaptenic antigen failed to react again with any other homologous simple antigen or with an

antigen containing the same haptenic group coupled to heterologous protein. Some strips, desensitized to simple haptenic groups, reacted on exposure to homologous protein. Some univalent antigens gave very weak reactions and also were found to be poor antibody producers. Negative results were obtained with a few antigens. Simple univalent substances inhibited the activity of simple multivalent substances and complex azoprotein antigens. Although hapten-antibody complexes are easily dissociated, this could not be accomplished by washing. The hapten could not be successfully washed away and the inhibiting effect of simple univalent haptens remained, although the intestinal strip reacted when the protein component of the immunizing antigen was added to the bath. It was concluded that simple polyhaptenic antigens produce anaphylactic responses in sensitized smooth muscle strips and that the previous addition of univalent haptens inhibits these reactions. The inhibiting action is not removed by washing the tissue.

A.

Miscellaneous

The Clinical Occurrence of Eosinophilia. Stickney, J. M., and Heck, F. J.: M. Clin. North America **28**: 915, 1944.

Eosinophilia occurs in a large variety of diseases which seems to have a common etiological basis in that they are of an allergic nature. In a number of other diseases, there is no apparent explanation for the occurrence of eosinophilia. Experimentally, eosinophilia may be induced by repeated injections of egg albumen, erythrocytes (or hemoglobin), pilocarpine, and aqueous extracts of *Taenia solium, Ascaris lumbricoides,* or trichina. The occurrence of more than 6 per cent of eosinophiles in the blood is regarded as an eosinophilia. It commonly occurs in asthma, hay fever, vasomotor rhinitis, parasitic infestation, dermatoses, blood dyscrasias, and lymphoblastoma. Eosinophilia is occasionally observed in malignant lesions, periarteritis nodosa, postfebrile debility, starvation, syphilis, polymyositis, pleural effusions, benzene poisoning, transient pulmonary infiltration, and also following digitalis therapy and the ingestion or parenteral administration of liver.

A group of 418 cases at the Mayo Clinic, showing an eosinophilia of 6 per cent or more, was statistically analyzed. It was concluded from this study that the degree of eosinophilia could not be employed as an index in differential diagnosis. Allergic disease of the respiratory tract was the most common cause of eosinophilia. Among the dermatoses, it was observed in eczema, pemphigus, dermatitis herpetiformis, mycosis fungoides, and dermatitis medicamentosa. Among acute and chronic infections, it occurred in acute appendicitis, chronic ulcerative colitis, chronic cholecystitis, and chronic infectious arthritis. Eosinophilia was common in malignant lesions, particularly when

metastatic involvement of the liver was present, and in diseases involving the reticuloendothelial system, such as chronic myelogenous leucemia. It occurred in 15 per cent of a series of 100 cases of lymphoblastoma. In periarteritis nodosa, a high incidence of eosinophilia was observed and this was an important diagnostic factor. In cirrhosis of the liver and other conditions associated with liver damage, eosinophilia was commonly found. In the present study, the observation that eosinophilia was seen most frequently in allergic diseases of the respiratory tract is qualified by the consideration that relatively few cases of parasitic infestation are seen at the Mayo Clinic. The possibility of the presence of blood dyscrasia or of periarteritis nodosa must be taken into consideration when an eosinophilia in excess of 20 per cent is encountered.

A.

Periarteritis Nodosa: Our Present Knowledge of the Disease. McCall, M., and Pennock, J. W.: Ann. Int. Med. **21**: 628, 1944.

The subject of periarteritis nodosa is reviewed and observations on forty-seven patients are presented. The authors are inclined to support the hypothesis of a toxic etiology for this condition. The clinical symptoms observed were, in order of their frequency, weakness, myalgia, fever, tachycardia, hypertension, abdominal pain, loss of weight, palpitation, and dyspnea. No beneficial results were observed from sulfonamide treatment in seven patients. Papaverine hydrochloride was found to be useful as a vasodilator for the relief of peripheral arterial spasm. Fibrinoid necrosis of the media of arteries and veins, similar to that observed in the peripheral blood vessels in rheumatism and in disseminated lupus erythematosus, was found in necropsy studies.

H.

Periarteritis Nodosa, With Report of Three Cases Diagnosed During Life. Solomon, S., Kasich, M., and Kiren, N.: Ann. Int. Med. **21**: 638, 1944.

Three cases of periarteritis nodosa, which had been diagnosed during life, are presented. No mention is made of the presence of a personal or family history of allergy in these cases. The literature on the subject is reviewed.

H.

Immunologic Studies in Rheumatic Fever. I. Cutaneous Response to Type-Specific Proteins of the Hemolytic Streptococcus. Taran, L. M., Jablon, J. M., and Weyr, H. N.: J. Immunol. **49**: 209, 1944.

The cutaneous reactivity of rheumatic children to the "M" fraction of most of the known types of hemolytic streptococci was investigated. Type-specificity of the hemolytic streptococcus Group A has been dem-

onstrated by Griffith by agglutination and precipitative reactions. The antigenic components responsible for type-specificity are proteins known as "M" and "T." The "M" fraction has been shown to be primarily associated with type-specific antibody formation to the hemolytic streptococci and is usually found to be serologically identical with only one type of the Griffith classification of hemolytic streptococci. The "M" fractions of twenty-five types of hemolytic streptococci were prepared and employed to test the patients. Control skin-testing material was also prepared. The "M" extracts were standardized on a total nitrogen basis and 0.1 ml. of extract was injected intracutaneously. Readings were made as soon as the reactions appeared and at various intervals thereafter until they faded. The reactions were graded from slight erythema (±) to vesiculation (5+). Each subject was tested with extracts of the "M" fraction of various strains of hemolytic streptococcus. Normal children, rheumatic children, and their normal siblings were tested. Many children showed positive reactions with the control material. Of 150 rheumatic children, 83 per cent showed positive cutaneous reactions to "M" fraction. In a group of 60 normal children from nonrheumatic families, 65 per cent showed positive cutaneous reactions. Among 30 siblings of rheumatic children, the incidence of positive cutaneous reactions was the same as among rheumatic children. The degree of skin reactivity was strongest among the siblings and weakest among the normal group. Skin reactivity was not more frequent or higher in active cases than in inactive cases and diminished only slightly following convalescence from the acute phase of the disease.

A.

Effect of Adrenotrophic Hormone of Pituitary Gland on Ability of Tissue to Synthesize Acetylcholine. Torda, C., and Wolff, H. G.: Proc. Soc. Exper. Biol. & Med. **57**: 137, 1944.

Mice were injected subcutaneously daily with adrenotrophic hormone for fifteen days, after which time the animals were killed. The brain was excised and was assayed for the synthesis of acetylcholine according to the method of Quastel, Tennenbaum, and Wheatley. The results indicated that the brains of animals injected with adrenotrophic hormone synthesized about 50 per cent more acetylcholine than did the brains of control animals. It was concluded that when adrenotrophic hormone of the pituitary gland is injected into living animals, it produces an increase in size of the adrenal gland, atrophy of the thymus and lymphatic tissue, and an increase in the ability of tissue to synthesize acetylcholine.

A.

Allergy Abstracts

Asthma and Hay Fever

Observations on Four Patients With Severe Asthma. Rackemann, F. M.: M. Clin. North America **28**: 1082, 1944.

Histories are presented of four cases with severe bronchial asthma accompanied by a state of severe exhaustion similar to surgical shock. The first patient suffered from intrinsic asthma, collapsed, and died during the course of a bronchoscopy. The second patient suffered from extrinsic asthma and collapse was presumably caused by too much adrenalin. In the third patient, the asthma and collapse resulted from an overwhelming acute bronchial infection. In the fourth patient, "countershock" produced symptoms more important than the causative asthma. The shock stage which may occur in status asthmaticus is best explained by the "alarm reaction" theory of Selye. The "alarm reaction" develops after repeated trauma or excitement and is accompanied by an outpouring of adrenin. If trauma is continued, debility becomes marked. The treatment of the shock which occurs with severe asthma is the same as the treatment of shock in general. The immediate intravenous injection of large amounts of fluids, such as plasma, glucose, or saline, is indicated. Morphine is justifiable only if the shock is worse than the asthma. Adrenalin may do more harm than good. In the "countershock" stage, when the asthma is severe and the patient is exhausted and depleted, fluids are again indicated. Adrenalin, aminophyllin, and oxygen therapy may be useful in the "countershock" stage. The point is made that asthma may eventually lead to complicating symptoms which are far more serious than the asthma itself.

A.

Urethane Administration and Potassium Content of Bronchial Secretions in the Cat. Boyd, E. M., and Perry, W. F.: Proc. Soc. Exper. Biol. & Med. **57**: 334, 1944.

In previous investigations, it was found that respiratory tract fluid showed a higher potassium content in cats under urethane anesthesia than in decerebrated cats. Potassium is related to sympathomimetic activity, and urethane is said to produce relaxation of the bronchial muscles in asthma. The present studies were undertaken in an attempt to determine whether or not the relaxing property of urethane was the result of the release of potassium ion in the respiratory tract. The respiratory tract fluids of seventeen decerebrated and fifteen ure-

thanized cats were analyzed. It was found that the output of potassium was three to four times greater in the respiratory fluid of urethanized, than in that of decerebrated, cats. The serum potassium level declined during urethane anesthesia while the potassium content of the respiratory tract fluid increased. It is suggested that the value of urethane in bronchial asthma may be explained by its action in increasing the concentration of potassium ion in the respiratory tract fluid.

A.

Roentgen Studies of the Heart in Asthmatic Children. Derbes, V. J., and Engelhardt, H. T.: J. Pediat. **25**: 394, 1944.

Using hypertrophy as an indication of cardiac disease, the author studied the hearts of twelve asthmatic children for evidence of enlargement. Standard methods for estimating heart size from roentgen plates were employed. The data obtained by these methods of measurement suggest that uncomplicated bronchial asthma is not a factor in heart disease.

F.

The Treatment of Bronchial Lesions by the Inhalation of Nebulized Solution of Sodium Sulfathiazole. Applebaum, I. L.: Dis. of Chest **10**: 415, 1944.

Fifty patients with various types of infectious lesions of the bronchi (infectious bronchial asthma, bronchitis, bronchiectasis, etc.), which were refractory to the usual forms of therapy, were treated by the inhalation of a nebulized solution of sodium sulfathiazole. Oxygen, flowing at a rate of 4 L. per minute, was passed through a 5 per cent sulfathiazole solution in a nebulizer. The patient, holding the nebulizer between his teeth, breathed with his mouth open for twenty minutes. Treatments were administered three times daily for an average of ten consecutive days. The response to therapy was judged on the basis of reduction in the cough, diminution and change in the character of expectoration, subsidence of objective signs, and general improvement. Forty-three cases (86 per cent) showed definite improvement. In the asthmatic group, musical râles became scanty or absent, and vital capacity tests revealed an increase in respiratory reserve. Treatment was discontinued in two patients in whom swelling of the nasopharyngeal mucosa occurred.

H.

Advances in Inhalation Therapy With Particular Reference to Cardiorespiratory Disease. Segal, M. S.: New England J. Med. **231**: 553, 1944.

Forty-nine cases of pulmonary or cardiac diseases demonstrating anoxia, obstructive breathing, or pulmonary edema were treated by

the use of oxygen and helium-oxygen mixtures, by inhalation sprays of bronchodilator, vasoconstrictor, aminophyllin, and sulfonamide solutions, and by positive pressure therapy. Twenty-one patients in the series were suffering from bronchial asthma. The majority of the asthma patients were said to be adrenalin-fast and had not responded to intravenous aminophyllin, oxygen, or sedation with morphine and paraldehyde. Positive pressure therapy with either oxygen or helium-oxygen mixtures was administered through the B.E.M. mask, which is metered for positive pressure up to 4 cm. of water in the expiratory phase. Where bronchospasm was severe, positive-pressure helium and oxygen mixtures were employed in both phases of respiration with the hood apparatus. Rectal aminophyllin, dilaudid, iodides, nebulization with neosynephrin and vaponefrin, and proper humidification were also employed to obtain continued bronchial relaxation. Neosynephrin in a 1 per cent solution was found to be very effective as a vasoconstrictor of the tracheobronchial tree and to control excessive secretions. Frequently refractoriness to adrenalin was abolished after neosynephrin inhalation. Refractoriness to neosynephrin was never observed. Vaponefrin appeared to be an effective bronchodilator, especially when combined with neosynephrin. Aminophyllin, when nebulized, was also effective in the treatment of bronchial asthma in doses of 0.5 to 0.7 Gm.

In patients with chronic bronchiectasis and pulmonary fibrosis, vaponefrin sprays followed by continuous vaporization sprays of a microcrystalline suspension of sulfathiazole, together with the oral administration of iodides, appeared to be the most effective form of treatment. Inhalation therapy is regarded as an important adjunct in the treatment of cardiorespiratory disease.

A.

Inhalation of Chemotherapeutic Substances. Mutch, N.: Lancet **2**: 775, 1944.

Quantitative studies are reported in connection with the inhalation of sulfonamide mists, produced by a Collison inhalation apparatus which was modified by the writer. When a 50 per cent aqueous solution of sulfonamide E.O.S., nebulized by 6 to 8 L. of oxygen per minute, was inhaled through a small rubber nose mask, it was estimated that the subject absorbed approximately 1 c.c. of solution per hour. Bronchiectatic patients absorbed more than normals. The amounts absorbed by dyspneic patients increased as the ventilation rate rose. Only 7 to 14 per cent of the nebulized drug reached the blood stream. The feasibility of penicillin inhalation therapy is discussed.

H.

Dermatology

Poison Ivy Smoke. Howell, J. B.: Arch. Dermat. & Syph. **50:** 306, 1944.

Experiments were conducted to determine whether poison ivy smoke can cause clinical ivy dermatitis. An apparatus was constructed by which the smoke of burning dried ivy leaves was absorbed in acetone. This material produced positive contact reactions on ivy-sensitive persons. The small particles of soot and leaves in the acetone suspension were believed to account for the positive reactions. In another experiment, the smoke was filtered through cotton before being passed through the acetone. After concentration by evaporation, this extract was employed for patch testing. Ten individuals who were clinically sensitive to ivy and who had previously reacted to patch tests with poison ivy extract failed to show positive reactions to the smoke extract. Unfiltered smoke, when allowed to contact the skin of two ivy-sensitive subjects for two minutes, failed to produce dermatitis.

In a second series of experiments, ten clinically sensitive individuals were confined in a closed room in which several pounds of a mixture of the dried leaves, roots, and branches of *Rhus toxicodendron* was slowly burned. Each individual bathed his arms, face, chest, and back in the smoke for twenty minutes. In seven individuals no dermatitis developed. Three who held both forearms 12 to 18 inches above the burning leaves for five minutes developed a mild dermatitis of the forearms. It was concluded that poison ivy smoke is not a cause of clinical ivy dermatitis. Small particles of poison ivy leaves, soot, and charred matter carried by the smoke may contain enough ivy oleoresin, however, to produce dermatitis.

A.

A Case of Light Sensitization. Erskin, D.: Brit. J. Dermat. **56:** 195, 1944.

A severe case of light sensitization was observed in a patient, aged 18 years, who had been employed two months as a welder and was under treatment for seronegative primary syphilis. He had had eczema at the age of 6 years. On the ninth day of antisyphilitic treatment, he developed an erythema but this cleared, and the first course of arsenic and bismuth therapy was completed in a three-month period. During the last weeks of treatment, he developed pustular lesions on the sacrum and thighs and a papular rash on the hands and forearms which were exposed to the carbon arc while at work. Gradually, he developed a scaly erythema of the face and forearms and had to be hospitalized. Laboratory tests were negative for arsenic intoxication. A blood study was normal and no increased porphyrin excretion was found. A test dose of mercury light produced a marked reaction.

Whenever the patient was exposed to the open air, he developed generalized furunculosis and acute dermatitis of the exposed parts of the body. Test doses of mercury vapor light with various filters indicated that the ultraviolet band was responsible for sensitization and that window glass gave complete protection. Numerous types of therapy, such as desensitization with fractional doses of mercury vapor light, autohemotherapy, and topical applications, failed to produce beneficial results. The skin cleared when the patient was confined to a ward during the winter while the windows were closed. Relapses occurred when light reached him through open windows in spring or summer. Sulfonamides produced an exacerbation of the skin lesions. The author concluded that this patient was sensitive to the ultraviolet wave band in contradistinction to the common type of light sensitivity in which sensitivity occurs to rays of a wider band with a longer wave length. In the common variety of light sensitization in adults, there is evidence of hepatic insufficiency, and beneficial effects are obtained from the injection of concentrated vitamin A ester. In the present case this did not hold true.

A.

Contact Dermatitis From Penicillin. Pyle, H. D.: J. A. M. A. **125**: 903, 1944.

A medical officer in charge of penicillin production developed a marginal blepharitis and an acute dermatitis of the face. A plastic spectacle frame was suspected, but its removal did not improve the condition. When dermatitis developed on the hands and penis, contact with penicillin was discontinued and improvement followed. Patch tests with penicillin as it is used and with crystalline penicillin were positive. Tests with material contained in the culture media were negative. Three hospital workers who handled penicillin also developed slight itching of the face and penis.

F.

Dermatitis From Blue Uniforms. Carpenter, C. C., and Banzer, J. W.: U. S. Nav. M. Bull. **43**: 754, 1944.

Three cases of dermatitis due to hypersensitivity to substances present in blue uniforms were noted in men of the Naval personnel. The lesions were most intense on the upper inner aspect of the thighs, the inner surface of the arms, the antecubital fossae, and the wrists. Two patients also had conjunctivitis. No vesiculation was noted in spite of the severe pruritus. The eruption appeared only when the patients donned blue uniforms. Patch tests were performed on each patient with dye concentrate, various types of blue uniform cloth, wool threads, finish extract, and the patient's own uniform cloth. Strongly positive reactions were obtained in each instance with the patient's

own uniform cloth and less marked reactions were obtained with other types of blue cloth, with wool threads, and with finish extract. These cases of true sensitivity should be differentiated from those in which the symptoms are produced by the mechanical irritation of rough woolen garments. Treatment consists essentially in removing the cause. This may be accomplished by wearing long cotton underwear or by transferring the individuals to duty in warm climates, where white uniforms are worn.

A.

Dermatitis Produced by Tintex Stocking Dye. Hollander, L.: Arch. Dermat. & Syph. **50**: 200, 1944.

A vesiculo-erythematous dermatitis of the inner surfaces of the legs and thighs, which was proved to be due to Tintex stocking dye, is reported. The patient, a white female, accidentally cut herself about the left ankle. A few days afterwards, a blistery eruption appeared at the site of the injury and began to spread rapidly over the legs and thighs. The patient stated that she had been using Tintex to dye her stockings. A patch test performed with this dye elicited a positive reaction within twenty-four hours. The eruption subsided when the use of the stocking dye was discontinued. The patient had been wearing Tintex-dyed stockings for many months without ill effects until she cut her leg.

A.

Treatment of Eczematous Contact Dermatitis With Intravenous Injections of Sodium Thiosulfate. Strickler, A.: Arch. Dermat. & Syph. **50**: 251, 1944.

Twenty patients with contact dermatitis were treated with intravenous injections of sodium thiosulfate. Five injections were given at intervals of twenty-four to forty-eight hours. The dermatitis had been present for less than six months in eleven, and for a longer period in nine patients. Several case histories are presented. The intravenous injection of sodium thiosulfate proved effective in relieving the symptoms of eczematous contact dermatitis within a short period of time in many of the cases. The duration of the improvement varied. The mechanism of the action of sodium thiosulfate is unknown. Local therapy, consisting of boric acid solution, was employed while the efficacy of sodium thiosulfate was being investigated.

A.

Contact Dermatitis From Alfalfa and Bur Clover. Anderson, C. R.: Arch. Dermat. & Syph. **50**: 201, 1944.

Dermatitis from contact with alfalfa and bur clover is described. The patient, a white female, developed an acute vesicular dermatitis

of the hands and wrists four days after having pulled up some alfalfa and trimmed some eugenia bushes. Patch tests were strongly positive to alfalfa and eugenia bush. A recurrence of the dermatitis was noted after the patient pulled up some bur clover. A patch test with bur clover elicited a strongly positive reaction. Dermatitis from alfalfa and bur clover has not been previously reported in man. Alfalfa and bur clover are of the same genus.

A.

Dermatitis From Tyroglyphidae in Handlers of Straw. Saunders, T. S.: Arch. Dermat. & Syph. **50**: 245, 1944.

Mites of the family Tyroglyphidae caused eruptions which could not be distinguished morphologically from contact dermatitis. Two cases of dermatitis which resulted from the handling of straw infested with mites are reported. Both patients were employed in a supply house where they removed chinaware from straw-packed containers. The lesions were confined to the exposed surfaces including the wrists, forearms, face, and neck and consisted of erythema and excoriated urticarial papules. Examination of the offending straw revealed the presence of mites of a species of Tyroglyphidae. The lesions cleared up following the avoidance of contact with the infested straw and with the application of soothing ointments. The parasites may be killed by exposure to dry heat at 150° F.

A.

Eczematous Contact Dermatitis Due to Mercurials. Samitz, M. H.: Arch. Dermat. & Syph. **50**: 10, 1944.

The author reports a case of unusual sensitivity to 10 per cent ammoniated mercury. This sensitivity produced in the patient not only skin lesions but also toxic symptoms. The patient, a white male, applied ammoniated mercury ointment twice daily over some papules on his forehead. After two days, he developed eruptions in the creases of the elbows, axillae, and groins. He was instructed to apply the same ointment to these areas. Two days later he was admitted to the hospital with chills, fever, nausea, trismus, and a spreading erythematous morbilliform eruption. Edema involved the entire face. A grayish discoloration of the gums and edema of the gingival tissues were also present. Within forty-eight hours after admission, a generalized erythematous maculopapular eruption developed. This was a typical "id" lesion resulting from the absorption of the toxins of the contact dermatitis. The patient was treated locally and generally for mercury poisoning and made an uneventful recovery. A patch test performed with 10 per cent ammoniated mercury after the patient had fully recovered showed a markedly positive reaction.

A.

Dermatitis From Penicillin. Binkley, G. W., and Brockmole, A.: Arch. Dermat. & Syph. **50**: 326, 1944.

Two cases of dermatitis from penicillin were observed in physicians who handled solutions of sodium penicillin. In the first patient, dermatitis of the upper extremities and face appeared a few weeks after handling solutions of sodium penicillin. Frequent washing of the hands probably prevented involvement of these areas. A contact reaction to sodium penicillin became positive within forty-eight hours. A strong positive reaction was also observed six hours after an intracutaneous injection of penicillin. The second patient developed dermatitis of the face and hands about six weeks after exposure to penicillin. Contact, intracutaneous, and ophthalmic tests with penicillin were all negative. Six hours after receiving an intramuscular injection of 60,000 units of penicillin, the patient experienced pruritus of the hands and feet. In twenty-four hours there was a papular eruption of the hands and feet, which subsequently subsided. Desquamation of the skin followed. The fact that the patient had a focus of dermatophytosis on his feet may have predisposed him to this reaction. In both cases, the dermatitis disappeared soon after contact with penicillin was removed.

A.

Contact Dermatitis From Amorphous Sodium Penicillin. Silvers, S. H.: Arch. Dermat. & Syph. **50**: 328, 1944.

Dermatitis of the eyelids, face, and penis were observed in a chemist who had been doing extensive research on penicillin for about one year. No lesions were noted on the hands. A patch test with a solution of commercial sodium penicillin became strongly positive within twenty-seven hours and had to be removed. A patch test with a solution of pure crystalline sodium penicillin was negative. It was concluded that the contact dermatitis in this patient was caused by the impurities present in the commercial yellow amorphous form of sodium penicillin.

A.

Shoe Dermatitis Among Soldiers. Dolce, F. A.: Mil. Surgeon **95**: 505, 1944.

Ten cases of shoe leather dermatitis, involving the sides and dorsa of the feet, toes, and ankles were observed. All of these patients had an associated hyperhidrosis. The lesions were initiated or aggravated by exercise and warm weather. Patch tests with shoe leather were positive in the three cases reported in detail. Treatment of the hyperhidrosis and a change in the type of shoes worn proved effective in eliminating the condition.

F.

Otorhinology and Ophthalmology

Frequency of Allergy in Orthodontic Patients. Straub, W. J.: J. Am. Dent. A. **31**: 334, 1944.

The incidence of allergic manifestations in orthodontic patients was investigated. Studies were made on one hundred four patients attending the orthodontic division of the University of California College of Dentistry. Careful histories were taken and the patients received complete medical investigations. Patients with a personal or family history of allergy were skin tested with a small number of foods and inhalants. It was found that forty-one or 39.4 per cent of the one hundred four patients were definitely allergic, thirteen or 12.5 per cent fell into the borderline group, and fifty or 48.1 per cent were entirely negative. Dentofacial anomalies were present in 61.5 per cent. It is suggested that allergy be suspected in cases of nasal blockage. It is definitely related to the development of dentofacial anomalies. Seventeen per cent of the allergic group showed pronounced gingivitis suggestive of an allergic rather than an inflammatory etiology. It was concluded that a large number of orthodontic patients are allergic and the most effective way to reduce the incidence of dentofacial anomalies is the early recognition and correction of chronic nasal or respiratory allergy.

A.

Phenylpropylmethylamine: A Clinical Study of a New Volatile Nasal Vasoconstrictor. Stitt, H. L.: Laryngoscope **54**: 623, 1944.

A volatile amine, phenylpropylmethylamine, may be used by inhalation to produce decongestion of the nasal tissue. It does not cause blanching or irritation of the nasal mucosa. This compound has a toxicity about equal to that of ephedrine and about one-half of that of amphetamine. It apparently has little pressor effect and does not produce euphoria, nervousness, or insomnia.

F.

pH of Nasal Mucosa of Some Laboratory Animals. Dietz, A. A.: Proc. Soc. Exper. Biol. & Med. **57**: 339, 1944.

The pH of the nasal mucosa probably plays a role in the defense against bacterial and viral invasions. There has been considerable controversy as to what constitutes the normal pH of the nasal mucosa. In the present study, special glass electrodes were constructed for measuring the nasal pH of hamsters, ferrets, and rats. The temperature at which the readings were made proved to be a very important factor and was kept constant at 35° C. The normal pH under carefully controlled conditions was found to be 7.2 in the animals tested. This value is of the same order as that found in man.

C.

Experimental Production of Negative Pressure in the Frontal Sinus. Hilding, A. C., and Essex, H. E.: Proc. Soc. Exper. Biol. & Med. **57**: 316, 1944.

Although the symptom complex of so-called vacuum headache has long been known, the physiologic mechanism behind it has never been demonstrated. Dogs were anesthetized, and two hypodermic needles were inserted into one frontal sinus of each animal; the cavity was then rendered airtight. One needle was connected to a water manometer while the other was connected to a syringe which contained mucinous secretions collected from the trachea of dogs. A needle was also inserted in the opposite sinus and connected to a manometer. This sinus served as a control. Following the injection of mucus into the sinus, a sharp rise in pressure (+270) occurred. Within two minutes, the pressure began to drop; within five or six minutes, it became negative, reaching its lowest point (−59.5) within forty-seven minutes. It remained negative until the experiment was terminated two hours after injection. The same experiments were repeated with similar results in five of six normal sinuses. It was presumed that the negative pressures were caused by the removal of mucus through the ostium by ciliary activity. Since the ostium was occluded by the mucus, air could not enter to replace the mucus as it was removed. In order to prove that the air could not have been removed by absorption through the blood stream, similar experiments were conducted on the detached heads of decapitated animals. The results were similar, proving the point.

C.

Miscellaneous Allergies

A Survey of Deaths and Unfavorable Sequelae Following the Administration of Contrast Media. Pendergrass, E. P., Chamberlin, G. W., Godfrey, E. W., and Burdick, E. D.: Am. J. Roentgenol. **48**: 741, 1942.

Questionnaire information on 661,800 urographic examinations is reported. There were twenty-six deaths in this series, five of which may not have been precipitated by the contrast medium. Case histories are presented. In sixteen cases, death was delayed. Ten deaths were immediate, and all occurred following the intravenous use of diodrast. Seven of these exhibited such manifestations as itching, dyspnea, cyanosis, confusion, convulsions, shock with slow pulse and respirations, coma, and death in less than forty-five minutes. The delayed deaths were characterized by renal insufficiency. Most of these cases were known to have had previous renal damage. Fatalities occurred with diodrast, skiodan, iopax, and neo-iopax. One death following an intraspinal, and another following an intracerebral, injection are also reported. Other manifestations reported include iodism, "true shock," rhinitis, lacrimation, salivation, and urticaria. Reactions are more fre-

quent when pitressin is used. Retrograde ureteral studies do not result in these reactions. Prior to this study, eleven other fatalities were reported, seven of these being immediate "diodrast" deaths.

E. Kailin.

The Effect of Sensitivity on the Distribution of the Tubercle Bacilli in Tuberculosis. Brosius, W. L., and Woodruff, C. E.: Am. Rev. Tuberc. **50**: 473, 1944.

Previous investigations have demonstrated that tuberculous patients who are moribund frequently fail to react to intracutaneous doses of tuberculin. Autopsy studies, in twenty-nine individuals whose tuberculin skin sensitivity level had been adequately studied, showed that the presence of tubercle bacilli was indicative of anergy or low level sensitivity. Cases with high levels of skin sensitivity showed few or no acid-fast bacilli in lesions. A marked difference existed in the pathologic lesions of the two types of cases. In patients who reacted to high dilutions of tuberculin shortly before death, the few bacilli present were found only in caseous tissues or exudates but never in direct relationship with living cells. When little or no sensitivity existed, bacilli were present in great numbers in living tissues and appeared to be proliferating in or on the cells. In many patients who had lost their sensitivity, caseous lesions without bacilli were found alongside lesions full of bacilli. The bacilli-free lesions always appeared to be older than the bacilli-laden ones, which seemed to be of relatively recent origin, being exudative in type and nonencapsulated. It appears that sensitized tissues possess a factor which destroys the bacilli or which results in the destruction of the tissue by the bacilli. When tubercle bacilli come in contact with highly sensitized tissues, either the cells are destroyed, or the bacilli undergo lysis, or both of these processes take place. This explains the failure to find bacilli in the lesions of highly allergic patients except in cavities. Tuberculous cavities were found to have an avascular barrier which separated the bacilli from underlying vascular tissue, thus preventing the growth-inhibiting factors present in sensitized tissue from reaching the bacilli. This "exteriorization" explains how highly sensitized patients may have bacilli in the sputum.

F.

The Influence of Hypnosis on Passive Transfer and Skin Tests. Zeller, M.: Ann. Allergy **2**: 515, 1944.

It had previously been reported that, under hypnosis, the whealing response of the skin of sensitive individuals is inhibited. Attempts were made to substantiate this report. Two subjects, one with bronchial asthma and negative skin tests and the other a normal individual, were passively sensitized with a reaginic ragweed serum. Twenty-four hours later, positive reactions were obtained when these sites were

tested with ragweed extract. The patients were then placed under deep hypnosis and repeated suggestions were made that the skin response would not occur. While the subjects were in this state, the remaining untested sites were injected with ragweed extract. The whealing responses were identical with those obtained the previous day without hypnosis. Similar results were obtained with direct testing of ragweed-sensitive individuals before and during hypnosis. It was concluded that psychogenic factors do not influence the allergic skin mechanism.

A.

A Simple Rapid Flocculation Slide Test for Trichinosis in Man and in Swine. Suessenguth, H., and Kline, B. S.: Am. J. Clin. Path. **14**: 471, 1944.

An alkaline aqueous extract of powdered trichina larvae was used to coat cholesterin crystals and provide a specific antigen for a simple rapid flocculation slide test for trichinosis. The test possesses a high degree of specificity and sensitivity. Positive results were obtained in thirteen sporadic human cases of trichinosis and negative results in twenty-three cases of suspected trichinosis and 857 controls. Among the latter were three cases of other parasitic diseases and 140 cases with positive tests for syphilis. The flocculation reaction became positive in man and in swine about three weeks after infestation. Positive reactions were still present after ten months. It is suggested that this simple test be used routinely on hogs at the time of slaughter.

H.

Migraine Headache: Some Clinical Observations on the Vascular Mechanism and Its Control. Atkinson, M.: Ann. Int. Med. **21**: 990, 1944.

Twenty-one cases of uncomplicated migraine were studied over periods varying from six months to two years. The diagnosis was made on the basis of paroxysms of unilateral headache, with nausea or vomiting, dating back to adolescence or early adult life and severe enough to be incapacitating at times. Visual disturbances during the attack (nine cases), an hereditary history (twelve cases), and relief from the use of ergotamine tartrate (ten cases) helped to confirm the diagnosis. No case gave a positive response to an intracutaneous test with histamine, according to the author's criteria. Hence he concluded that these headaches were based on a primary vasoconstrictor mechanism. Therapy consisted of the administration of nicotinic acid by the intravenous and intramuscular routes. In addition to medication, a high-protein low-carbohydrate diet was recommended. Improvement was noted in fifteen, complete relief in two, and failure in four cases. The mechanism of the migraine syndrome is discussed.

H.

Agranulocytosis Following Thiouracil Administration. Rubinstein, M. A.: Am. J. Clin. Path. **14**: 540, 1944.

This is the second case report of severe agranulocytosis occurring during the course of thiouracil therapy. About 0.2 Gm. of thiouracil was given four times daily. Marked leucopenia was noted about six weeks after onset of therapy. After the drug was discontinued, there was a progressive leucopenia prior to complete hematologic recovery. Improvement in the bone marrow picture preceded that in the peripheral blood. It is suggested that there was a specific sensitivity to the drug in this case.

H.

Anaphylaxis

Failure to Sensitize Guinea Pigs Passively With Equine Antisera That Fix Guinea Pig Complement. Follensby, E. M., and Hooker, S. B.: J. Immunol. **49**: 353, 1944.

There have been a number of reports dealing with the failure to sensitize guinea pigs passively with equine antisera. The suggestion of early workers that a serum's complement fixing power bore some relationship to that serum's sensitizing power was not confirmed in more recent studies.

Two equine antisera which fixed guinea pig complement were employed in the authors' studies. One was prepared with hemocyanin as the antigen and the second with crystalline ovalbumin. Among fifty-one guinea pigs sensitized with equine sera, there was not a single instance of fatal anaphylaxis. However, in a series of six guinea pigs sensitized with rabbit antihemocyanin, four were fatally shocked, one had severe symptoms but recovered, and one showed only mild symptoms. In Schultz-Dale experiments, the uteri of guinea pigs sensitized with rabbit antihemocyanin responded promptly to antigenic stimulation, but the uteri of animals sensitized with equine antihemocyanin failed to do so. Passive sensitization of rabbits with equine antihemocyanin was also attempted in six animals. Of these, only one showed mild anaphylactic symptoms. Attempts at sensitizing rabbits' blood passively in vitro were made with both rabbit and equine hemocyanin. No appreciable change in the histamine content of plasma was noted. The histamine content of the plasma of guinea pigs passively sensitized with equine antihemocyanin failed to show an increase following the shocking dose. With rabbit antihemocyanin, one of four sensitized guinea pigs showed an increase of blood histamine after the injection of antigen. The blood of two contained a substance capable of blanching human skin.

A.

Experiments on the Sensitizing Properties of Penicillin. McClosky, W. T., and Smith, M. I.: Proc. Soc. Exper. Biol. & Med. **57**: 270, 1944.

Attempts were made to sensitize guinea pigs to penicillin. Two series of animals were injected, subcutaneously or intraperitoneally, with daily doses of penicillin for five days. One group was tested by intracardiac or intravenous injection of penicillin and the second group by the Schultz-Dale technique. Some of the animals in each group were also sensitized to horse serum. Eleven guinea pigs were tested by intravenous or intracardiac injections of penicillin in doses ranging from 5,000 to 23,000 Oxford units. Of these, two died with typical symptoms of anaphylactic shock, and two showed moderate symptoms but recovered. Seven failed to react or showed questionable symptoms. Of these seven, three did not react to horse serum, and two showed typical symptoms but recovered. Thirteen animals were tested by the Schultz-Dale technique. Positive reactions were observed with the uterine strips of only five animals. The response to penicillin, when present, was delayed. Desensitization to penicillin could not be accomplished in those experiments in which a positive response was observed. In eight normal controls, penicillin failed to cause a contraction of the isolated uterus. It was concluded that guinea pigs could be sensitized with commercial penicillin. The role that impurities in penicillin played in sensitization was not determined. The positive reactions obtained were often atypical or delayed. It is suggested that the penicillin antibody-antigen combination lacks permanency and is more readily reversible than is the case in anaphylactic reactions with true proteins.

A.

Miscellaneous

Hemolytic Disease of the Fetus and the Newborn Infant; With Special Reference to Transfusion Therapy and the Use of the Biologic Test for Detecting Rh Sensitivity. Wiener, A. S., Wexler, I. B., and Gamrin, E.: Am. J. Dis. Child. **68**: 317, 1944.

About 90 per cent of reactions to intragroup blood transfusions and about 90 per cent of the cases of erythroblastosis are related to the Rh factor. Usually, patients with hemolytic reactions to intragroup transfusion and mothers delivered of erythroblastotic infants have Rh-negative blood. However, in order to prove that the Rh factor is responsible for the reactions, it is necessary to demonstrate that sensitization to the Rh factor has occurred. There are two in vitro tests for sensitivity to Rh factor. The in vitro tests have certain disadvantages, since a high percentage of persons with Rh-negative blood are highly sensitive to Rh factor, and yet their plasma does not contain any demonstrable anti-Rh agglutinins. This may be explained by the fact that, in addition to Rh antibodies that produce hemoagglutination,

there are Rh antibodies capable of combining with Rh-positive cells without producing a visible reaction. This type of Rh antibody is called Rh blocking antibody, since it blocks the action of anti-Rh agglutinins.

A biologic test for Rh sensitivity was previously described by one of the authors and was employed in the present study to detect sensitivity to Rh factor caused by pregnancy. This test is of particular value where facilities for carrying out in vitro tests are not available. It consists of the intravenous injection of 50 c.c. of blood to which the patient may be sensitive and grossly comparing the colors of the patient's citrated plasmas obtained before, and one and one-half hours after, injection. If sensitivtiy is present, the second sample of plasma is darker. Often the patient has a chill and a rise in temperature about an hour after the injection. The test was employed in women who had repeated miscarriages or stillbirths. In one case, it was proved that Rh sensitivity was not responsible for the repeated miscarriages. In a second case, a positive biologic test proved that two stillbirths were probably due to isoimmunization even though in vitro tests for anti-Rh agglutinins in the women's serum had been negative. Two cases of hemolytic disease of the newborn, treated by transfusion of Rh-negative blood, are described.

A.

The Demonstration of Antibodies in Lymphocytes. Dougherty, T. F., Chase, J. H., and White, A.: Proc. Soc. Exper. Biol. & Med. **57**: 295, 1944.

The presence of antibodies in lymphocytes was demonstrated. Normal mice were repeatedly injected intraperitoneally with a solution of sheep erythrocytes over a period of several weeks. After five weeks of immunization, two groups of five mice each were bled from the heart and sacrificed. Inguinal, axillary, cervical and mesenteric lymph nodes, and the thymi were removed. The lymphoid tissue from each group of five mice was pooled and extracted. A control extract was made from the lymphoid structures of nonimmunized mice. Agglutinin and hemolysin titers were made on the extracts and on the pooled sera of each group of five animals. The extracts from both groups of immunized mice contained antibody protein since they produced agglutination and hemolysis. The nitrogen content of the titers of extracts of lymphoid cells from immunized mice was eight times greater than that of the corresponding sera. Salivary gland or muscle tissue extracts from the immunized mice contained no agglutinins or hemolysin. Lymphoid cell extracts and sera of nonimmunized mice did not contain antibodies. It was concluded from these studies that antibody production takes place in lymph nodes and that antibody is concentrated chiefly within lymphocytes. The production of antibodies by lymphocytes has not yet been demonstrated.

A.

Autohemagglutinins—"Cold Agglutinins." Favour, C. B.: J. Clin. Investigation **23**: 891, 1944.

The cold agglutinin test was carried out on a series of patients suffering from atypical pneumonia and from common respiratory infections. Control studies were carried out on patients suffering from other acute and chronic illnesses and on normal subjects. Cold agglutinin titers, varying from 1:5 to 1:160, were found in members of each of the groups studied, including the normals. The latter, however, usually gave a history or showed signs of a recent infection. Atypical pneumonia was associated with the presence of serum cold agglutinins more often than the common respiratory infections or any of the other diseases studied. Titers as high as 1:160 were uncommon except in severe atypical pneumonia. It was noted that cold agglutinins may persist for as long as nine months following atypical pneumonia and that they may appear or disappear without evidence of infection.

F.

A Completely Supplemented Evaporated Milk and Its Use as a Food for Infants. McCollum, E .V., and Grubb, W.: Am. J. Dis. Child. **68**: 231, 1944.

A completely supplemented evaporated milk was prepared and employed as a food for infants. The product was concentrated and fortified with all the necessary vitamins. It provided 570 calories per can. Additional calories were obtainable by including more carbohydrates. Eighty-three infants were maintained on supplemented evaporated milk for an average period of six months. All thrived and measured up to the accepted standards of growing infants. There were no evidences of vitamin insufficiencies. It was concluded that completely supplemented evaporated milk is a suitable and complete food for infants for at least the first nine months of life. The food was stored for six months without deterioration.

A.

Significance of Blood Histaminase in Pregnancy. Ahlmark, A.: Lancet **2**: 406, 1944.

A method to determine the amount of histaminase in the blood is described. Increased histaminase activity was observed during the seventh week of pregnancy. The rate of increase was fairly constant for each individual. During the second half of pregnancy, the histaminase activity increased 500 to 1,000 times above the normal. The histaminolytic power of the blood was lowered when abortion was imminent. The guinea pig and rat, animals with high histaminolytic power in the placenta, showed, like humans, an increased blood histaminase during pregnancy. Cats and rabbits, however, showed low values.

H.

Allergy Abstracts

Asthma and Hay Fever

Roentgen Studies of the Heart in Asthmatic Children. Derbes, V. J., and Engelhardt, H. T.: J. Pediat. **25**: 394, 1944.

The influence of bronchial asthma on the heart was investigated in a group of children all of whom had had bronchial asthma for a number of years. The heart size of each patient was estimated by physical examination, fluoroscopy, and teleroentgenograms. By means of mathematical formulas, it is possible to predict the transverse diameter of the heart using the height and weight or the cardiothoracic ratio. The actual and predicted transverse diameters appear to be closely correlated. The cardiac area was determined by the Eyster-Hodges nomogram and also by computation. The figures agreed closely by both methods.

The results of the roentgen studies indicated that uncomplicated bronchial asthma does not cause heart disease. However, complications of asthma such as emphysema, fibrosis, and bronchiectasis are believed to be possible causative factors of cardiac pathology. A.

Electrocardiographic Studies in Asthmatic Children. Engelhardt, H. T., and Derbes, V. J.: J. Pediat. **26**: 160, 1945.

Electrocardiographic studies of seventeen asthmatic children from 5 to 14 years of age, with an average age of 9.3 years, were made. The average duration of the asthmatic condition was 4.7 years. The authors confirm their previous findings that uncomplicated bronchial asthma in children is not a factor in the production of heart disease. F.

Asthma Produced by Ascaris Infestation. Earle, K. V.: Tr. Roy. Soc. Trop. Med. & Hyg. **37**: 451, 1944.

An acute attack of asthma apparently due to ascaris infestation is described. The patient, a Negro West Indian seaman, suddenly developed a severe attack of asthma while at sea. During the attack, which was the first one he had ever experienced, he vomited a frothy, bile-stained material which contained three live ascaris worms. The attack subsided almost immediately after the vomiting. The family history and the personal history were negative for allergy. Skin tests performed with the aqueous extracts of ascaris were positive. The patient received hexylresorcinol as a vermifuge, but stool specimens never showed the presence of ova or parasites. The author concluded that the patient was sensitive to ascaris antigen, but failed to manifest clinical sensitivity until an attack of asthma was precipitated by the migration of three worms from the small intestine into the stomach. A.

Transitory Lung Infiltrations Accompanied by Eosinopilia. Miller, H.: New England J. Med. **232**: 7, 1945.

The author presents a case of Löffler's syndrome with transitory lung infiltrations accompanied by an unusually high blood eosinophilia. The personal and family histories were negative for allergy. The symptoms consisted of a transient low-grade fever, coughing, expectoration, and diminished resonance with fine râles at both bases. Sputum examination showed little except a large number of eosinophiles. The stools showed ova or parasites on only one occasion when a few ova of *Trichuris trichiura* were found following the administration of a vermifuge. Skin tests and agglutination tests for parasites were negative. Radiographic examination of the chest revealed areas of increased density

scattered through both lung fields. Their resolution was followed by the reappearance of infiltration in the lower lobe of the right lung. The blood eosinophilia varied from 64 to 85 per cent during the first two months of the illness and returned to normal at the end of the third month after treatment with Mapharsen. The etiological agent could not be determined. A.

Mold Fungi in the Etiology of Respiratory Allergic Diseases. III. Immunologic Studies With Mold Extracts. 1. Preparation of Experimental Extracts. Prince, H. E., and Morrow, M. B.: Ann. Allergy **2**: 483, 1944.

Clinical experience has shown that many irritative reactions are encountered in skin testing with the usual types of mold extracts. In an effort to determine the cause of such false reactions several different methods for preparing alternaria and aspergillus extracts were used. They include: (1) Drying by lyophilization; (2) drying by lyophilization and defatting; (3) drying by lyophilization, defatting, and grinding; (4) drying by lyophilization and grinding; and (5) usual method (slow drying). F.

Mold Fungi in the Etiology of Respiratory Allergic Diseases. III. Immunologic Studies With Mold Extracts. 2. Mold Extracts—Preparation—Irritative Reaction From Skin Tests With Experimental Extracts. Figley, K., Wittich, F. W., Black, J. H., et al.: Ann. Allergy **2**: 489, 1944.

Skin tests with mold extracts prepared by the five methods previously described were performed on a group of patients sensitive to alternaria and on a control group. No difference was found in the reactions to any of these extracts that could be attributed primarily to the method of preparation. These extracts were as active as those prepared in the usual manner. F.

Mold Fungi in the Etiology of Respiratory Allergic Diseases. III. Immunologic Studies With Mold Extracts. 3. Failure to Find Histamine-Like Substances in the Washings and Extracts of Molds Used for Skin Testing. Seele, W. A.: Ann. Allergy **2**: 493, 1944.

Histamine is widely distributed in the tissues of plants, and it was first identified in a fungus. It is possible that it may be found in mold extracts. In addition, peptone, which is a constituent of broths on which molds are grown is converted to histamine when contaminated by certain bacteria. In view of these facts, an assay for histamine-like substances was carried out on the broth, washings, and extracts of several fungi. *Alternaria tenuis* and *Aspergillus niger* were the molds used in the study. The Schultz-Dale technique was employed for making the assays. It was found that the washings or broth of the various molds and the 1:20 dilution of mold extracts fail to produce specific contractions of the guinea pig uterus or intestine. In order to determine whether the human skin responds to amounts of histamine which were too minute to produce reactions by the Schultz-Dale technique, twenty-seven normal subjects, ranging in age from 5 to 50 years, were tested with 0.02 c.c. of histamine base in dilutions varying from 1:50,000 to 1:5,000,000. Physiologic saline was used as control. None of the patients reacted to the 1:5,000,000 dilution, but increasing numbers reacted to the stronger dilutions. However, the guinea pig uterus and intestine reacted to dilutions as great as 1:600,000,000. F.

Mold Fungi in the Etiology of Respiratory Allergic Diseases. III. Immunologic Studies With Mold Extracts. 4. Skin Tests With Broth and Washings From Mold Pellicles. Prince, H. E.: Ann. Allergy **2**: 500, 1944.

In nine normal individuals, alternaria extracts and saline washings from the pellicles and broth failed to produce irritative reactions. In alternaria-sensitive cases, the broth and washings gave positive reactions. When the pellicles are washed in saline prior to extraction, some of the skin-reactive substance was lost. This may account for the lack of potency of previously prepared extracts. F.

Mold Fungi in the Etiology of Respiratory Allergic Diseases. IV. Skin Reactions to Molds as Correlated With Relative Importance in Treatment. Zink, P. L.: Ann. Allergy **2**: 502, 1944.

Seven hundred five patients were tested with extracts of alternaria, hormodendrum, penicillium, helminthosporium, and aspergillus in dilutions of 1:100. Of these, 41.7 per cent failed to react to any of the extracts, 23 per cent reacted to one, 14.5 per cent to two, 12.5 per cent to three, 6.5 per cent to four, and 2.5 per cent to all five extracts. On the basis of skin tests and clinical course, airborne molds seemed to possess etiological significance in 25.5 per cent of the 705 patients tested. Alternaria was considered the most important in treatment, with helminthosporium and hormodendrum less so. Aspergillus and penicillium were found to have little clinical significance. F.

Is Vaccine Therapy of Value in Allergies of Children? Stoesser, A. V.: Lancet **64**: 351, 1944.

Studies were made on two hundred fourteen children between the ages of 6 and 10 years, who gave a definite history of infections associated with their allergic rhinitis or bronchial asthma. Efforts were made to determine whether the infection was a primary or secondary cause of the allergic condition. Those cases in which the infection was primary were employed in evaluating the effects of various types of vaccine therapy, such as stock vaccines, autogenous vaccines, and undenatured bacterial antigens. Each case was subjected to a routine allergic work-up. The tonsils and adenoids were removed where this step was indicated. A few cases had maxillary antrum punctures and irrigations.

Only thirteen patients who had been subjected to surgical procedures responded satisfactorily, and it was concluded that tonsillectomy and adenoidectomy are of little therapeutic value in bronchial asthma. One hundred forty-two patients in the series showed satisfactory results after the elimination of offending foods, the avoidance of inhalant allergens, and hyposensitization therapy with specific pollen mixtures. The number of acute infections in these cases decreased and those which did occur rarely precipitated allergic reactions. Hence the allergic approach seemed to produce the best results.

Of the entire group, fifty-nine cases were regarded as being primarily infectious, since their attacks were precipitated by infections and were usually accompanied by fever and an elevation of the leucocyte count. These patients failed to respond to surgical procedures and showed negative skin reactions to common allergens. Skin tests with bacterial antigens were inconclusive. Each patient was treated over a long period of time with vaccines. The poorest response was obtained with autogenous vaccines and the best with the undenatured bacterial vaccines. Fair results were obtained with stock vaccines. All vaccines, except the undenatured bacterial vaccines made by killing the bacteria without heat or chemicals, are regarded as nonspecific agents. A.

Dermatology

Contact Dermatitis in a Morphine Factory. Dore, S. E.: Prosser, E. W., and Green, G. C.: Brit. J. Dermat. **56**: 177, 1944.

Nine cases of morphine dermatitis developed among eighteen employees in a plant manufacturing morphine. The average period between the onset of exposure and the appearance of symptoms was fourteen and a half weeks. The greatest number of cases occurred among those who dried, milled, and packed the morphine salts. There was no history of previous dermatitis in any of the patients. The eruption usually started about the eyelids, and the neck was also a common site. The arms and hands were usually affected last. The dermatitis tended to be localized to the exposed parts, although in one case it became generalized. Most of the patients developed upper respiratory symptoms before the onset of the dermatitis. The specific sensitizer responsible for the dermatitis was not isolated. Patch tests performed with morphine hydrochloride in 1:100 dilution on one hundred three normal subjects were all negative. Detailed case records of the nine cases are given.

A factory manager of a large English concern manufacturing morphine products states that "morphia rash" is a common occurrence among his employees. It is useless to continue to employ a man once he has become sensitized, since immunity is never acquired. The rash may appear soon after exposure or only after ten to thirty years of work with opiates. The handling of crude Indian morphine produces the greatest reaction in sensitized persons. The sensitizer may be in impurities in the morphine, but this is hard to prove since chemically pure morphine is not available. "Morphia rash" cannot be produced by the injection of morphine. A.

Sulfonamide Dermatitis. Further Observations With Special Reference to Treatment and Prevention. Tate, B. C., and Klorfaju, I.: Lancet **2**: 553, 1944.

On the basis of attempts at oral desensitization in thirty patients suffering with sulfonamide dermatitis, the following procedure is recommended. A preliminary test dose of 0.125 Gm. is administered twice daily. If the resulting eruption is not severe, this dose is continued; otherwise, it is decreased. When the eruption begins to decrease in intensity, the dose is increased. If the increment produces no reaction, 2 Gm. are given, followed at four-hour intervals by two doses of 1 Gm. each. If no reaction is noted, the last dose preceding the 2 Gm. dose is continued for fourteen days. After an interval of ten days, the patient is retested to see if desensitization is complete. Desensitization should not be begun until the original eruption has disappeared. Exposure to sunlight must be avoided during the desensitization period. Continuous blood studies are necessary. Reactions during desensitization included fever (up to 103° F.), aggravation of dermatitis, loss of consciousness (one case), and urticaria (two cases). When desensitization was complete, spontaneous resensitization did not take place. New local applications to two patients failed to resensitize them. Passive transfer tests were negative. In these tests, the antigen was administered orally to the passively locally sensitized subjects. H.

Urticaria Due to Inhalant Substances. Derbes, V. J., and Engelhardt, H. T.: South. M. J. **37**: 729, 1944.

Two cases of urticaria attributed to inhalant substances were studied. The first patient, a 42-year-old white woman, had suffered from ragweed hay fever for six years. Shortly after the onset of the pollen season, she would develop edema of the face and a generalized urticaria. This would persist throughout the hay fever season and then would disappear. She never had hives at any other time of the year. When the hay fever was adequately controlled by treatment, she remained free of hives during the season. The second patient, a white boy, aged 11 years, had had ragweed asthma for three years. During the hay fever season, exposure to fumes of fresh paint produced asthma and urticaria within one-half hour. The skin reaction to cottonseed was positive. The literature on the subject is reviewed. A.

Dermatitis Due to Barbiturates. Report of a Case With Associated Anemia. Potter, J. K., and Whitacre, R. J.: Ann. Int. Med. **21**: 1041, 1944.

About three hours after taking 1½ grains of luminal, the patient experienced a severe chill followed, within a few hours, by a generalized erythema and a rise in temperature to 104° F. The dose was repeated the next day with a similar result. Chill and fever were again noted the following day after taking 1½ grains of amytal and 3½ grains of aminopyrine. Twenty-four hours later the entire body became covered with large blebs and a progressive anemia developed. Recovery began with desquamation a week later. Anemia is unusual in the exfoliative dermatitis due to barbiturates. Long-acting barbiturates, such as phenobarbital, cause the greatest number of cutaneous reactions. Short-acting barbiturates, such as pentobarbital sodium and pentothal sodium, rarely precipitate cutaneous reactions. H.

Hazards of the External Use of Sulfonamide Compounds. Abramowitz, E. W.: Arch. Dermat. & Syph. **50**: 289, 1944.

The indiscriminate eternal use of sulfonamide compounds is decried. While the topical application of sulfathiazole may be of immediate value in the treatment of many skin conditions, it may lead to the development of local or generalized dermatitis. Photosensitization to sunlight or ultraviolet light may also follow. Sulfonamides frequently prolong the healing time of wounds and may cause sanguineous oozing. The prolonged external use of sulfonamides leads to refractoriness to the drug. Sensitization may prevent the subsequent use of sulfonamides when needed for some serious condition. It is suggested that the use of sulfonamide ointments be restricted. A.

Dermatitis Following the Local Application of Sulfanilamide. Fisher, B.: M. J. Australia **2**: 449, 1944.

One hundred cases of sulfanilamide dermatitis following local application are reviewed. The sulfanilamide had been applied for at least three days. Two to four days later, pruritus usually occurred. Eight to twelve days later, the itching became generalized and an eruption began to appear. In all cases, the rash cleared following removal of the drug. Patch tests were performed after slight scarification of the skin. Six of twelve patients had severe generalized cutaneous reactions following application of the patch tests for from twelve to twenty-four hours. Lighting-up of healed lesions was noted in five cases. Four of eight patients tested by oral administration of the drug had generalized reactions. H.

Occupational Dermatitis Caused by Germicidal Powder "Microlene." Sterling, A.: J. A. M. A. **127**: 219, 1945.

A waitress, who had suffered from severe dermatitis of the hands, forearm, arms, and neck for four years, was found to be sensitive to a germicidal powder (Microlene) used in the dishwashing process. Patch tests with the chemical were strongly positive. F.

Hypersensitivity to Ephedrine. Spencer, G. A.: Arch. Dermat. & Syph. **51**: 48, 1945.

The patient, a Negro woman, had used an oily preparation of nose drops two days prior to the onset of the eruption. The lesions consisted of an acute erythematous papulovesicular and scaling eruption around the nostrils and upper lip. Discrete erythematous and papular lesions were also noted on the forehead, neck, trunk, and upper and lower limbs. Patch tests with the ingredients of the oily inhalant gave negative reactions to menthol, eucalyptol, and camphor and a positive to ephedrine. A.

Dermatitis of the Feet and Hands Due to Rubber. Anderson, C. R.: California & West. Med. **61**: 65, 1944.

The true nature of the contact dermatitis of the feet and hands due to rubber is frequently unrecognized. Rubber dermatitis of the feet is much more frequent among women then among men, since rubber is used extensively in the manufacture of women's shoes. Rubber cement is employed for basting various layers of the shoes during the sewing process and for fastening down the sock liner to the inner sole. Elastic rubber fabric is often employed as an inner lining of the uppers to give a snugger fit. Rubber dermatitis may involve any part of the foot in contact with the rubber cement or rubber fabric and is manifested by erythema, edema, vesiculation, weeping, and crusting. The condition is frequently confused with epidermophytosis. The commonest sites involved are the toes and the sides of the heels. Rubber dermatitis of the hands occurs frequently among physicians who wear rubber gloves. Treatment consists in elimination of the offending substance. A.

Hair Lacquer Dermatitis in Infants From Contact With Mother's Hair. Plotz, M.: Am. J. Dis. Child. **68**: 409, 1944.

Two cases of dermatitis were observed in infants under the age of 1 year. In both instances, the lesions were shown to have been due to contact with lacquer on the mother's hair. The first case was that of a 10-month-old infant who had been treated for "eczema" since the age of 2 months without success. Dermatitis was noted on the face, forearms, and neck. The unexposed portions of the body were clear. Patch tests with the lacquer present in the pads used by the mother yielded strongly positive reactions. When the mother discontinued the use of lacquer, the infant's dermatitis cleared up. The second patient was a 6-month-old infant with essentially the same history and lesions. In this case, patch tests performed with the mother's hair lacquer were also positive, and the lesions disappeared following the discontinuation of the use of the hair lacquer. A.

Otorhinology and Ophthalmology

Immunological Approach to Studies on Certain Diseases of the Eye. Shwartzman, G.: J. Mt. Sinai Hosp. **11**: 21, 1944.

The occurrence of local sensitization of the eye in absence of general systemic sensitization is regarded as highly improbable.

There is little immunologic evidence to support the theory that sympathetic ophthalmia is allergic in nature. In atopy and drug idiosyncrasies, the eye may or may not participate in allergic reactions depending upon the route of entry of the antigen. If the antigen reaches the sensitized eye by way of the blood stream, conjunctivitis and keratitis may result. In air-borne sensitization, the eye may be affected more than any other organ of the body. There is a great deal of evidence to support the theory that atopic sensitization plays a role in the etiology of vernal catarrh. However, there are strong suggestions that some virus may also play an etiological role in this condition.

Bacterial allergy is discussed from the point of view of tuberculin hypersensitiveness. Sterile phlyctenular lesions and tuberculides of the exudative and proliferative types are frequently attributed to bacterial hypersensitiveness although products of bacteria other than the tubercle bacillus elicit the same lesions.

The phenomenon of local tissue reactivity to bacterial filtrates may explain the occurrence of certain ocular diseases. The state of vulnerability characteristic of the phenomenon can be elicited by certain bacterial toxins, localized bacterial infections, and certain localized virus infections. The provocative factors may be bacterial toxins, nonbacterial antigen-antibody complexes, and live bacteria carrying the toxins and are effective only when they reach the vulnerable tissue by way of the general circulation. A state of reactivity may be induced in the ocular tissues by bacteria or viruses normally present on the surface of the eye or in the conjunctival sac in the course of some insignificant infection. For example, in vernal conjunctivitis, a complex of the atopic antigen with the specific antibody of the allergic individual may in turn be capable of producing injury in the vulnerable site by way of the vascular system. A.

Pharmacologic Studies of a New Vasoconstrictor: 2-Naphthyl-1'-Methyl-Imidazoline Hydrochloride (Privine or Naphthazoline). Craver, B. N., Chase, F., and Yonkman, F. F.: J. Pharmacol. & Exper. Therap. **82**: 275, 1944.

Privine elevates the blood pressure of anesthetized dogs about one-third as much as an equal weight of epinephrine and lacks a subsequent depressor phase. Yohimbine and ethyl yohimbine, drugs which paralyze sympathetic nerve endings, diminish the pressor response to privine but do not bring about a marked depressor response as they do with epinephrine. Neither cocaine nor epinephrine give more than an additive pressor response when combined with privine. There is no change in blood pressure response when about seven times the recommended human dose of privine is instilled into the noses of

dogs, nor is there evidence of absorption of privine from the gastrointestinal tract. Privine is reported to constrict the mucous membranes topically, to cause a brief mydriasis, to inhibit intestinal movements, and to stimulate contraction of the virgin guinea pig uterus. It does not relax the bronchioles of an isolated guinea pig lung.

Privine may be synergistic with sodium pentobarbital in the depression of respiration but not with urethane or ether. E. Kailin.

Some Circulatory Effects of Privine Hydrochloride. Emerson, G. A.: J. Pharmacol. & Exper. Therap. **82**: 42, 1944.

The writer confirms the reports of other investigators that in dogs privine elicits a pressor response which is not appreciably influenced by atropine or cocaine. Cardiac irregularities and Cheyne-Stokes respiration may occur when large doses of privine are given intravenously to dogs anesthetized with sodium pentobarbital and sodium barbital. The depressor response to epinephrine is increased following privine medication. Piperidino-methyl-benzodioane (933 F.) reduces but does not reverse the pressor action of the privine. E. Kailin.

The Use and Abuse of Nasal Vasoconstrictor Medications. Kully, B. M.: J. A. M. A. **127**: 307, 1945.

The author discusses the various sympathomimetic compounds used as nasal vasoconstrictors. These medications cause reactions which simulate the response resulting from stimulation of the postganglionic nerves. Their effect on the nasal mucosa is chiefly the result of action on the blood vessels and secondarily on the secretory function. There is constriction of the subepithelial capillaries and arterioles and also of the venous sinuses of the erectile tissues. Nasal secretion is diminished in contrast to the increased secretion which occurs when vasoconstriction results from chilling of the body. If vasoconstriction is severe and prolonged, a reaction ensues in the form of a secondary vasodilatation which involves the deeper venous sinuses more than the subepithelial vasculature. This reaction is due either to an active vasodilator in the drug or to fatigue of the constrictor mechanism. When it occurs, the mucosa becomes less responsive to subsequent applications of the vasoconstrictor drugs. Epinephrine and amphetamine are examples of drugs which cause severe reaction, while ephedrine and neosynephrin represent those producing mild reactions. None of the adrenergic drugs, however, are without some secondary congesting effect. Vasoconstrictors incorporating the sulfonamides are of questionable use as antiseptics and increase the irritation and reaction caused by the nasal medication. Inhalant forms of vasoconstrictors produce severe reactions. Those in oily mediums are less irritating than the aqueous solutions only because they are less effective in their primary action. In acute rhinitis, minimal use of a mild decongestant may be indicated, but here, as in other inflammatory processes, such treatment reverses the physiologic response and may prolong or alter the course of the process and induce sinus and otitic complications. Sensitivity to nasal medications indistinguishable from a true allergic reaction may occur in the course of a vasomotor rhinitis. A case of this type is reported. The patient received weekly anti-allergic treatments for thirty years with little help until discontinuance of all nasal medication resulted in a clearing up of the condition. F.

Miscellaneous Allergies

Penetration of Allergens Into the Human Skin. Herrman, F., Sulzberger, M. B., and Baer, R. L.: New York State J. Med. **44**: 2452, 1944.

The immediate wheal response was employed to determine which vehicle would best facilitate the penetration of powdered atopen into unbroken skin. Patients suffering from atopic dermatitis were used as subjects. The vehicle which produced the best results consisted of alkyl benzene sulfonate mixture, antipyrine, water, and propylene glycol. The inunction test was always positive when a scratch test with the same atopen was positive. However, in a few in-

stances the scratch test was negative when the inunction test was positive. In these cases, an intracutaneous test with the same atopen usually yielded a positive reaction. The only false positive tests obtained by inunction occurred in patients with dermographism and these wheals were atypical. Twice as many positive reactions were obtained with intracutaneous tests as with either scratch or inunction tests. E. Kailin.

Psychosomatic Aspects of Allergy. Karnosh, L. J.: Psychiatric Quart. **18**: 618, 1944.

The nervous reactions observed among allergic patients do not differ from those seen among patients suffering from any chronic, irksome, disabling, and irritating affliction. Nervous and mental disease is almost always an accompanying factor in allergic disease even though it is impossible to establish a causative relationship between allergy and mental disease. The mental attitude of allergic individuals is governed by the severity and the duration of the allergic symptoms and is greatly colored by the innate temperament of the person. There is no evidence that allergic children are intellectually precocious nor is there any evidence of the presence of a so-called "allergic personality." Emotions and allergies are interlocked and disturbances of one affect the other. A.

Neurological Complications of Serum and Vaccine Therapy. Hughes, R. R.: Lancet **247**: 464, 1944.

Six cases of neurological complications following serum or vaccine therapy are described. The commonest complication was the so-called radicular type of serum neuritis. A few days after the onset of serum sickness, severe pains followed by weakness and eventually by wasting of the muscles developed over one or both shoulders and arms. The muscles most often affected were the deltoid, spinati, serratus magnus, biceps brachialis, and triceps. Other types of neuritis which have been noted following serum sickness include: (1) the neuritic type, in which pain develops along the distribution of a peripheral nerve, followed by paralysis about twenty-four or forty-eight hours later; (2) the polyneuritic type; and (3) the central type, in which there is evidence of cerebral involvement, usually papilledema, meningeal reaction, or focal cerebral lesions. Of three cases of serum neuritis observed by the author, two were of the radicular type and followed the administration of tetanus antitoxin. The third patient had received a series of tetanus toxoid and T.A.B. vaccine. About ten days after the last intramuscular injection of tetanus toxoid, the patient developed a weakness of the left side of the face, a slurring of the speech, loss of power in the left arm and leg, and nystagmus. No evidence of serum sickness was observed. The left hemiparesis was thought to be the result of the tetanus toxoid rather than of the T.A.B. vaccine.

The case histories of three additional cases of serum neuritis were abstracted from hospital records. In two instances, the patients had received T.A.B. vaccine and tetanus toxoid injections, and, in the third case, T.A.B. vaccine had been given intravenously and sulfathiazole orally. It could not be decided whether the vaccine or the tetanus toxoid precipitated the neuritis. Neither of these patients had developed serum sickness or urticaria.

It is suggested that the neuritis in all of these cases might have been the result of a direct toxic action of the serum or vaccine on the nervous tissue. However, most observers believe that such lesions are due to allergic edema. Peripheral neuritis seen in patients who have not received serum or vaccine therapy are attributed to virus infections of unknown etiology. A.

Sulfonamide Sensitivity and C-Avitaminosis. McCormick, W. J.: Canad. M. A. J. **52**: 68, 1945.

It is suggested that vitamin C deficiency may be the conditioning factor which predetermines potential sensitivity to the sulfonamides. The acute C-avitaminosis may be precipitated by the increased demand for the vitamin associated with the primary infection or with the toxic effects of the chemo-

therapy. A preliminary urinary test of vitamin C status prior to the institution of chemotherapy is suggested as a prophylactic measure against sulfonamide sensitivity. If the vitamin C content of the body is deficient, large doses of ascorbic acid should be administered together with the sulfonamides. Several cases of sulfonamide sensitivity which responded favorably to vitamin C therapy are cited. A.

Anaphylaxis

The Excretion of Histamine in Urine. Anrep, G. V., Ayadi, M. S., Barsoum, G. S., Smith, J. R., and Talaat, M. M.: J. Physiol. **103**: 155, 1944.

Previous attempts to demonstrate the presence of histamine in normal urine by biologic methods have failed. An experimental method is presented which demonstrates that histamine is normally excreted in the urine in a conjugated and inactive form from which the active base can be released by hydrolysis with hydrochloric acid. A minute amount of free histamine is shown to be normally present in the urine. The concentration of histamine conjugate in the urine depends on the diet. Meat contains histamine in free form and raises the amount excreted to a marked degree. Casein, fresh white cheese, and egg albumen do not contain free or conjugated histamine and do not increase histamine excretion. Carnivora excrete far more histamine than do Herbivora. Histaminase does not act on conjugated histamine.

The histamine excretion in dogs was found to be like that of man. Dogs on a histamine-free diet, when injected subcutaneously with from 6 to 50 mg. of histamine, excrete free histamine in the urine; the amount of conjugated histamine excreted is unchanged. When histamine diphosphate is given orally to these animals, 3 to 5 per cent is excreted as conjugated histamine and none as free histamine.

Subcutaneously injected conjugated histamine is excreted in unchanged form. Since no blood level of the conjugate could be obtained, it is probable that the renal threshold for this substance is low. Conjugated histamine, unlike free histamine, has no effect on urinary secretion and does not produce a vasomotor action. When conjugated histamine is fed to dogs it is excreted more rapidly in the urine than histamine diphosphate and about 60 per cent can be recovered in the urine. E. Kailin.

The Mechanism of Anaphylactic and Allergic Reactions. An Evaluation of the Role of Histamine in Their Production. Code, C. F.: Ann. Allergy **2**: 457, 1944.

An extensive review of the literature dealing with the role of histamine in anaphylactic shock and allergic reaction is presented. Histamine shock duplicates the anaphylactic reaction in the guinea pig. In the rabbit, the anaphylactic reaction is accompanied by a fall in the carotid pressure, dilatation of the right side of the heart, and increased pulmonary vascular resistance due to contraction of the muscular coat of the pulmonary arterial tree. Histamine injected into rabbits causes a similar pulmonary vascular constriction. In the dog, the anaphylactic reaction is characterized by a fall in blood pressure and a reduction in the coagulability of the blood. The former effect is caused by histamine, while the latter is due to the release of heparin from damaged liver cells. Investigations to date have shown histamine to be present only in the white blood cells and in the cells of the skin. Since allergic reactions occur in other tissues, it seems likely that the principal result of the anaphylactic and allergic reactions is cellular damage. If the damage occurs to histamine-bearing cells, there is a liberation of this substance. If an animal survives the sudden histamine release, this substance soon disappears from the blood, leaving behind the damaged cells. Cells which do not contain histamine may, as a result of an allergic reaction, suffer damage which may be severe enough to cause death of the animal. Production of histamine is only a secondary effect, and it is concluded that cellular damage is the primary effect of the allergic reaction and that the mechanism which produces the damage is, as yet, unknown.

The Mechanism of Desensitization. Bronfenbrenner, J.: Ann. Allergy **2**: 472, 1944.

The term desensitization is misleading since it suggests that antibody level determines the reaction which follows exposure to antigen. The assumption that the immune state is associated with the presence of circulating antibody, whereas the anaphylactic state is associated with the presence of fixed antibody and the absence of circulating antibodies is erroneous. The hypersensitive state in man and animals is in fact often associated with an increase in the circulating antibody. Furthermore, if it were true that excess of circulating antibody protects sensitized tissue, it should follow that repeated injections of antigen over a period of hours should bind amounts of circulating antibody, thus enhancing the possibility of a reaction between tissue and antigen. Actually, the reverse is true, as evidenced by results obtained through slow administration of a therapeutic serum. In the case of refractoriness following either a single, large, but sublethal dose or a series of injections of small amounts of antigen over a period of hours, the short time required for the development of the refractory state makes it unlikely that it is the result of increased antibody titer. Moreover, high concentrations of circulating antibody do not protect animals against lethal anaphylactic shock. Desensitization is never complete but only relative, and an animal which is immune to the usual anaphylactic dose may be shocked if a higher multiple of the dose is given. If the cells had lost their power to unite with a moderate amount of antigen, it is hardly likely that they could react to a larger dose. Moreover, animals which are sensitized to two or more antigens may be made more or less refractory to all of them by the injection of a single antigen. Since this is the case, it must follow that "desensitization" cannot be due to the specific saturation of sessile antibodies. It has been shown that passive anaphylaxis can be produced in guinea pigs without allowing any "period of incubation." In view of these and other considerations, it seems likely that the refractory state is not dependent upon antigen-antibody reaction, but is more likely based on the activation of serum tryptase through physicochemical changes initiated by antigen-antibody union. The products of this digestive activity (polypeptides, etc.) exert an antitryptic activity. These substances are nondializable and persist for a long time. Since histamine is released by the action of trypsin or its toxic products, the presence of antitrypsin renders such action impossible, thus resulting in the refractory state. F.

Miscellaneous

Pituitary-Adrenal Control of Antibody Release From Lymphocytes. An Explanation of the Anamnestic Response. Dougherty, T. F., Chase, J. H., and White, A.: Proc. Soc. Exper. Biol. & Med. **58**: 135, 1945.

Antibody protein has been demonstrated in the lymphocytes obtained from the lymphoid tissue of immunized mice and rabbits. Augmented pituitary-adrenal cortical secretion accelerates the rate of release of antibodies from the lymphoid tissue by producing a dissolution of lymphocytes.

Since a variety of unrelated stimuli which are known to augment pituitary-adrenal cortical secretion are also effective in producing enhancement of antibody titers in the sera of previously immunized animals, an attempt was made to explain the anamnestic reaction of this basis. The anamnestic reaction is defined as the enhancement of antibody titer which occurs following the injection of various nonspecific substances unrelated to the original antigen.

Rabbits and mice were immunized with washed sheep erythrocytes and the agglutinin titers were determined. The animals were watched until no circulating sheep cell antibodies were present in the serum. They were then injected with various substances in an effort to produce the anamnestic reaction. Two types of adrenal cortical extracts were tested, an aqueous and an oily extract. Desoxycorticosterone acetate, adrenotrophin, potassium arsenite, and thiophene-free benzene were also tested for their ability to enhance the antibody titers. Agglutinin titers were done on lymphocyte extracts and sera. Some of the mice were adrenalectomized before injection of the extracts. A single sub-

cutaneous injection of the oily solution of adrenal cortical steroids, or of adrenotrophic hormone in aqueous solution, or aqueous adrenal cortical extract produced a marked release of antibody within nine hours. On the other hand, an intravenous injection of erythrocyte suspension, the original antigen, produced only a slight response. Desoxycorticosterone failed to produce the anamnestic response. In adrenalectomized animals, the response was produced by the injection of adrenal cortical extracts but not by adrenotrophic hormone indicating that adrenal cortical mediation is essential for control of the release of antibody from lymphocytes. Benzene and potassium arsenite employed as toxic stimuli liberated antibodies from the lymphocytes in nonadrenalectomized mice only. It was concluded that the pituitary-adrenal cortical secretion controls the release of antibody from lymphocytes. A.

Studies on the Technic of Collodion Agglutination. Cavelti, Philip A.: J. Immunol. **49**: 365, 1944.

The agglutination titer of a given antiserum was found to vary directly with the size of the collodion particles and with the concentration of the antigen. There is an optimal proportion between antigen and collodion particle concentrations. The reactivity and specificity of antigen-coated collodion particles are diminished by washing. Nonspecific reactions occur and a special control technique is suggested. The size, uniformity, and age of the collodion particles are important to the specificity of the reaction. A method of standardizing collodion particle size by selective centrifugation is described. E. Kailin.

Effect of Vitamins on Acetylcholine Synthesis. The Apparently Specific Action of Vitamin E. Torda, C., and Wolff, H. G.: Proc. Soc. Exper. Biol. & Med. **58**: 163, 1945.

The effect of vitamins on acetylcholine synthesis in vitro was studied. The substances to be tested were added to mixtures containing minced fresh frog brain, physostigmine salicylate, glucose, and Ringer's solution. Identical mixtures without the substances served as controls. The mixtures were shaken and incubated aerobically for four hours at 37° C. The total acetylcholine synthesized was then assayed biologically on the sensitized rectus abdominis muscle of the frog and compared with the acetylcholine content of identical nonincubated mixtures. The results indicated that vitamins A and K decreased the synthesis of acetylcholine in low and increasing concentrations. Vitamin D did not affect the synthesis in low concentrations and decreased it in higher concentrations. Riboflavin, nicotinic acid, nicotinamide, calcium pantothenate, p-aminobenzoic acid, pyridoxine, and vitamin C did not modify synthesis in low concentrations but increased it in higher ones. Vitamin B_1 increased the synthesis of acetylcholine in low concentrations and decreased it in higher ones. Vitamin E increased synthesis in low and increasing concentrations. The exact mechanism by which the vitamins modify the synthesis of acetylcholine is not known. The decrease of synthesis of acetylcholine in the presence of vitamin A may have some clinical significance, since the injection of epinephrine is followed by an increased concentration of vitamin A in the serum. Vitamin E is closely related to the synthesis of acetylcholine in the body. A.

The Pertussis Skin Test in the Newborn and Later Infancy. Kunstler, M.: Canada. M. A. J. **52**: 62, 1945.

Six hundred eighty children, varying in age from 1 week to 8 months, were skin tested with pertussis endotoxin. The percentage of positive reactions increased gradually until the eighth month of age indicating a loss of passive immunity. These results seem to parallel those obtained with the Schick test in the same age groups. Among sixty unselected children over 1 year of age, forty-five showed positive skin reactions and fifteen, negative. In this group, all with positive reactions had not had pertussis, while the fifteen negative reactors were all recently recovered cases.

The serum of newborn infants showing negative skin tests was mixed with pertussis endotoxin and tested by intradermal inoculations of rabbits. These

sera neutralized the skin test doses of pertussis toxin, while the sera of subjects showing positive skin reactions failed to neutralize the toxin. It was concluded that the pertussis skin test is a reliable index of immunity against pertussis. The immunity possessed by newborn infants with negative skin tests is probably due to the passive transfer of antibodies through the placental circulation. A.

Chemical Basis of Fever With Inflammation. Menkin, V.: Arch. Path. **39**: 28, 1945.

Recent studies have demonstrated the presence in exudate of a substance which offers an explanation for the basic pattern of injury in inflammation. This substance, termed necrosin, is the euglobulin fraction of the exudate or is associated with it. It is presumably liberated from cells which have been injured by an irritant. The intravascular injection of necrosin is followed promptly by leucopenia which is replaced several hours later by leucocytosis. Injury of the internal organs, especially of the liver and kidneys, may be noted. In the dog, a rapid elevation in temperature follows the intravascular injection of necrosin. This pyrogenic factor (pyrexin) may be dissociated from necrosin by differential solubility. It appears to be a hydrolytic product brought about by the action either of necrosin or of proteolytic enzymes associated with necrosin. Pyrexin is nondiffusible, heat stable, and is absent in normal non-hemolyzed blood serum. Pyrexin offers a reasonable explanation for the primary mechanism of the fever frequently accompanying inflammation. H.

Cold Agglutinins in Respiratory Disease. Freedman, A. M., and Mirsky, I. A.: Mil. Surgeon **95**: 512, 1944.

Determinations of the cold agglutinin titer were made on the following three groups of individuals: (1) patients in the respiratory disease ward of a station hospital, (2) patients with miscellaneous diagnoses, and (3) a control group. In 33 per cent of the cases with miscellaneous respiratory infections and in 14.6 per cent of the control series, cold agglutinins were found to be present but none had titers exceeding 1:64. Only those patients with atypical pneumonia and infectious mononucleosis had titers above 1:64. It is concluded that the presence of cold agglutinins in sera is not pathognomonic of any specific diagnosis, but that titers greater than 1:64 may be suggestive of primary atypical pneumonia or infectious mononucleosis. F.

Human Complement. Ecker, E. E.: J. Lab. & Clin. Med. **30**: 39, 1945.

Complement in human serum, as in guinea pig serum, is composed of at least four components. Three of these components have been isolated from human serum by various fractionation procedures. The second and third are components of the lowest titer in human complement. All four components are required for immune hemolytic and bactericidal reactions. It has been shown that the bactericidal and bacteriolytic effects of blood serum are dependent upon the interaction of two serum constituents, thermolabile complement and thermostabile antibody. Six species of bacteria have been shown to inactivate human complement by the fixation of the second and third components. The fixed complement components retain their capacity to participate in subsequent immunologic reactions such as bactericidal action. Complement titer varies in infectious diseases. The prognosis is grave in those patients in whom the complement titer drops to zero or near zero. When the complement disappears in these cases, it is primarily through the inactivation, fixation, or inhibition of the fourth component, and to a less degree, of the second component. Increased complement titers, all four components participating, have been noted in cases of scarlet fever, measles, and erysipelas. H.

Allergy Abstracts

Asthma and Hay Fever

Reaginic Allergy in Cattle. Reddin, L., Jr.: Am. J. Vet. Research **6**: 60, 1945.

The occurrence of reaginic allergy in cattle has been previously reported. It has been established that ragweed hypersensitiveness in cattle is similar immunologically to that observed in man and that reagins and thermostabile antibody may be demonstrated in the sera of these animals.

The present study was undertaken in an effort to determine whether the characteristics of the reagin found in cattle resemble those in man. Out of a herd of forty-two cattle 40 per cent were skin-sensitive to ragweed pollen extract. Clinical ragweed pollinosis was not evident in any of the animals. Ophthalmic tests on three animals which were highly skin-sensitive to ragweed pollen gave a positive reaction in one. Skin sensitivity to ragweed pollen could be passively transferred to nonsensitive cattle. The atopic reagin in cattle could be neutralized by the related antigen and the antigen-reagin reaction was found to be reversible as it is in humans. Attempts at passive sensitization of the human skin with cattle ragweed reagin were inconclusive, since the injection of bovine serum produced irritation and erythema of the skin or local "serum sickness." The passive transfer of human reagin to the skin of cattle was successfully accomplished. Repeated injections of ragweed pollen in a nonsensitive cow failed to stimulate reagin antibody formation. However, thermostabile antibodies were produced in this animal. It was concluded that atopic sensitivity to ragweed pollen can be demonstrated in cattle and that the reagins in this condition have the same characteristics as human reagins. A.

Pollinosis in San Diego County, California, With a Proposed Method for Estimation of the Relative Importance of the Plants Concerned. Harsh, G. F., McMichael, H., and Klein, J.: Ann. Allergy **1**: 27, 1945.

A mathematical formula is presented for determining the importance of a given plant species as a cause of pollinosis in any locality. Daily pollen counts and measurements of the size of the pollen granules were made. The percentage of patients reacting to each species was determined. It was noted that some individuals reacted strongly to certain grasses, but failed to react to others. The information obtained from the study helped the authors devise a method for preparing therapeutic pollen mixtures in a proper ratio. F.

The Clinical Use of Penicillin in the Treatment of Intrinsic Bronchial Asthma. Hampton, S. F., Wine, M. B., Allen, W., Thompson, C. S., and Starr, M.P.: J. A. M. A. **127**: 1108, 1945.

Nine cases of moderate or severe intrinsic bronchial asthma were treated with penicillin. Inhalants gave positive reactions in eight of the nine cases, but all food tests were negative. Allergic management had been unsuccessful. Penicillin was administered intramuscularly to five patients each of whom received a total of 500,000 Oxford units. One received 800,000 units and one received 1,300,000 Oxford units. At a later date, seven of these patients and two others were treated with penicillin intratracheally. A positive but transient skin reaction to a 1:100 dilution of penicillin was obtained in one of the patients who also reacted to the extract of penicillin mold. There was slight

clinical improvement in four of the nine cases, but it was doubtful whether this could be ascribed to the use of the penicillin. F.

Unusual Complications of Bronchial Asthma. Air in Extrapulmonary Spaces. Derbes, V. J., Engelhardt, H. T., and Sedeman, W. A.: Ann. Allergy **1**: 21, 1945.

Rare complications of an asthmatic attack are spontaneous pneumothorax and mediastinal and subcutaneous emphysema. Rupture of the pleura does not result from even the most violent paroxysms of coughing unless there are anatomic or pathologic alterations. When pneumothorax takes place, the rupture occurs through the action of a valve vesicle. Such a mechanism allows more air to enter than to leave the vesicle, until finally a rupture occurs. Deep inspiration is more likely to cause rupture than is coughing. In asthma, the expiratory phase is prolonged at the expense of inspiration, and this fact is believed to be the reason for the low incidence of spontaneous pneumothorax in this condition. These complications of bronchial asthma are not serious. The majority of patients recover spontaneously. Only in serious respiratory embarrassment may mechanical interference be indicated. Bed rest, the use of oxygen, and sedation are the important therapeutic measures. F.

Occupational Illnesses in Cotton Industries. II. Chronic Respiratory Problems. Ritter, W. L., and Nussbaum, M. A.: J. Indust. Hyg. & Toxicol. **27**: 47, 1945.

The occurrence and incidence of emphysema, bronchiectasis, and other pulmonary conditions, which have been ascribed to prolonged industrial exposure to cotton dust, were investigated in the cotton industry in Mississippi. Twelve individuals with asthma, who had been compelled to leave the cotton industry because of these complaints, were examined. All had been employed in cottonseed oil mills either in the linter rooms or in the large seed-storage bins. In two patients, a trial visit to the linter room precipitated asthmatic attacks. In all of these subjects, physical examination or x-ray studies failed to reveal evidence of bronchiectasis, emphysema, fibrosis, or other lung pathology. It was demonstrated that uncomplicated nonseasonal asthma could be precipitated in these cases with the dust from cotton linters. None were hypersensitive to either the oil expressed from cotton seed or to the dust environment where the residue is ground into meal. Susceptibility to the dust in cotton mills varies considerably, and reactions of a severe nature, resembling anaphylactic shock, are sometimes noted after exposure. The incidence of respiratory pathology among workers in the cotton industry is very low. A.

Serum Potassium Response to Epinephrine in Normal and Asthmatic Subjects. Dees, S. C.: Ann. Allergy **1**: 64, 1945.

Specimens of serum were taken from eleven asthmatic patients and seventeen normal individuals one, ten, and thirty minutes after the subcutaneous injection of 0.75 c.c. of 1:1,000 epinephrine. No significant alterations in serum-potassium levels were found. The fasting serum-potassium levels of patients in status asthmaticus were significantly higher than those in normal subjects. F.

Penicillin Therapy in Bronchiectasis. Stookey, P. F., Lockwood, I. H., Mantz, H. L., Buckingham, W. W., Upshur, A. E., and Hibbard, B.: South. M. J. **38**: 98, 1945.

Twenty-one patients with chronic bronchitis and bronchiectasis were studied roentgenologically and bacteriologically prior to the institution of penicillin therapy. Staphylococci were the most consistent and persistent pathogens. The incidence of streptococci was extremely low. The most common finding was the association of a staphylococcus with *Streptococcus viridans.*

Each of the twenty-one patients received an average of 1,000,000 units of

penicillin either intramuscularly or by continuous intravenous drip over a period of eight to ten days. No untoward effects were noted. Bacteriologically, the only changes observed following penicillin therapy were a decrease in the number of colonies of hemolytic streptococci and staphylococci and a slight reduction in the growth of nonhemolytic organisms. The volume of sputum was not appreciably altered. The secretion of bronchioles did not appear to be due to bacterial activity but to structural changes in the endothelial lining of the smaller bronchioles. It was concluded from this small series of cases that about 20 per cent of individuals suffering from bronchiectasis, chronic bronchitis, or chronic cough may be benefited by penicillin therapy. Cases of chronic bronchitis showing periods of activity and remission responded most favorably to penicillin. The response to penicillin in favorably affected cases was almost immediate, with a disappearance of the morning sputum and cough. In true bronchiectasis, penicillin had little effect. Recurrences usually followed penicillin therapy since no permanent immunity was established. A.

Severe Asthmatic Dyspnea as the Sole Presenting Symptom of Generalized Endolymphatic Carcinomatosis. Report of 2 Cases With Autopsy Findings and Review of the Pertinent Literature. Mendeleff, A. I.: Ann. Int. Med. **22**: 386, 1945.

Pulmonary metastases from intra-abdominal cancer produced a clinical syndrome "so typical of asthma" in two cases that therapeutic regimes, routine for bronchial asthma, were instituted without any suspicion of the underlying malignant process. In neither case was there clinical or x-ray evidence referable to the primary site of the neoplasm, which was in the stomach in one case and in the pancreas in the other. One of the two cases had a history of hay fever. In neither case did epinephrine or aminophylline afford any relief for the asthmatic type of dyspnea. H.

Dermatology

Histologic Studies on Percutaneous Penetration With Special Reference to the Effect of Vehicles. MacKee, G. M., Sulzberger, M. B., Hermann, F., and Baer, R. L.: J. Invest. Dermat. **6**: 43, 1945.

The rates and routes of absorption of substances incorporated in various types of vehicles and applied to the skin's surface were investigated. Biopsy procedures and histologic techniques were modified to avoid sources of error in studying percutaneous penetration, such as displacement of the applied material by the scalpel or punch during excision. The studies were made on guinea pigs and human beings. Bismuth compounds, iron compounds, dyes, and sulfonamides were incorporated in various types of vehicles and applied by inunction. The effect of the vehicles upon penetration was the primary study, the substances incorporated in the vehicles were employed merely as "tracers." Thirty-six different preparations in eight types of vehicles were investigated.

The results indicated that ointment bases containing lanolin or organic solvents such as propylene glycol do not penetrate the skin very well. Aqueous solutions produced more effective penetration of the skin. Water alone gave better penetration than fats or propylene glycol alone. The addition to the water vehicle of interface active agents and solubilizers such as sodium alkyl benzene sulfonate and antipyrine produced some increase in penetration. Mixtures of organic solvents, such as propylene glycol or xylene, and interface active agents, solubilizer, and coupling agents which contained no water, produced intense staining of the follicles and diffuse staining of lower layers of the epidermis. Even more intense staining was observed with vehicles consisting of mixtures of interface active agents and solubilizers in water and an organic solvent.

In all skin specimens, it was noted that an unstained zone appeared just below the stained upper horny layers. The passage of colored materials to

deeper structures through a zone which is left unstained is explained on the basis of the route of penetration which is believed to be as follows. From the surface, the material passes into the ostia of the follicles, down into the deeper follicles along the hair and root sheaths and out of the follicles into the cutis, somewhere below the lowest margin of the epidermis proper. Some investigators, however, believe that penetration occurs by way of the sebaceous ducts and glands and the sweat ducts and glands. The authors believe that the sweat glands and other routes do not play an important role in percutaneous absorption. A.

Unusual Ephedrine Reaction. Engelsher, D. L.: New York State J. Med. **45**: 307, 1945.

A 14-year-old asthmatic patient responded to a single dose of ephedrine sulfate with an extensive and prolonged dermatitis with ridging of the nails. Eight hours after the ingestion of 16 mg. of ephedrine sulfate, red, slightly swollen, itching areas developed in the axillae, on the knees, palms, and around the lips. The ridging of the finger nails persisted for many weeks as did the desquamation of the affected skin areas. H.

Overtreatment Dermatitis. Gaul, L. E.: J. A. M. A. **127**: 439, 1945.

Imprudent topical therapy may result in an increase in the severity and the prolongation of an otherwise mild dermatitis. The author cites several groups of cases to illustrate incidents of either irritation or sensitization resulting from injudicious application of skin remedies. Discontinuance of all medication except for saline compresses and collodial clay preparations may give the skin an opportunity to heal. Patch tests with the suspected ointments previously employed in treatment frequently were found to be positive. F.

Dermatitis in the Fish Industry. Schwartz, L., and Tabershaw, I. R.: J. Indust. Hyg. & Toxicol. **27**: 27, 1945.

Dermatitis is common among workers in the fish industry. The dermatological conditions noted may be classified in several groups: (1) abrasions and fissures; (2) bites and stings; (3) secondary infections; (4) "Redfeed" dermatitis; (5) erysipeloid lesions; (6) skin cancer; and (7) allergy. Allergic fish dermatitis occurs most commonly among those handling cooked fish. It is generally due to sensitivity to fish oils. Measures to prevent the occurrence of dermatitis from fish are described. A.

Urticaria in Infectious Mononucleosis. Case Report. Davison, S.: New York State J. Med. **45**: 410, 1945.

The unusual occurrence of generalized urticaria seven days after the onset of prodromal symptoms of infectious mononucleosis is reported. The urticaria preceded the characteristic blood changes found in this disease. The possible relationship of infectious mononucleosis to serum sickness and allergy is discussed. H.

An Intradermal Reaction as an Aid in the Diagnosis of Granuloma Inguinale. Kornblith, B. A.: New York State J. Med. **44**: 2476, 1944.

A tissue antigen was prepared from an acute lesion of granuloma inguinale of six weeks' duration. Nineteen proved cases of granuloma inguinale and a control series were tested intracutaneously with 0.1 c.c. of the test material, and the reactions were read forty-eight hours later. The histopathology of the "granuloma inguinale intradermal reaction" was that of a diffuse epithelioid reaction without any evidence of acute inflammation, necrosis, or polymorphonuclear leucocytosis. A histopathologic correlation between the actual lesions and confirmatory skin test of granuloma inguinale is presented. H.

Otorhinology and Ophthalmology

Relation of the pH of Nasal Secretions in Situ to the Activity of Lysozyme. Fabricant, Noah, D.: Arch. Otolaryng. **41**: 53, 1945.

In normal nasal passages the pH of the nasal secretions in situ varies from 5.5 to 6.4. During acute rhinitis and the active phases of allergic rhinitis the secretions become alkaline. Lysozyme, which has the property of dissolving certain bacteria, acts most effectively in an acid pH. It is most active in the slightly acid nasal secretions of the clinically normal nose and loses much of its activity in the alkaline nasal secretions accompanying the common cold.

The pH of nasal secretions measured in situ by means of the Coleman electrometer fluctuated according to the demands of physiologic function and as a result of pathologic nasal states, such as infections or allergic rhinitis. Fluctuations in pH of the nasal secretions affected the bacterial flora of the nose and sinuses. Eosinophiles in the secretions disappeared when the pH fell on the acid side, and reappeared as the pH returned to the alkaline side.

An attack of allergic rhinitis was experimentally induced in a young white female, who was known to be markedly sensitive to gardenias. The nasal pH before inhalation of the flower varied from 6 to 6.5. After experimental exposure and the development of symptoms, it rose rapidly and reached an alkalinity of pH 7.9. A.

The Epidemiology of Acute Respiratory Infections Conditioned by Sulfonamides. I. General Clinical Considerations. Siegel, M., and Julianelle, L. A.: Ann. Int. Med. **22**: 1, 1945.

Sulfadiazine was administered daily to thirty children for a fifteen-week period from December through March. There were no epidemics during this period by which the prophylactic value of the drug could be judged. The infections encountered were mild in both treated patients and in untreated controls. The mild infections appeared to be unaffected by the drug. Recognizable toxic reactions attributable to sulfadiazine were negligible. Significant changes in the bacterial flora of the nasopharynx were observed. H.

The Epidemiology of Acute Respiratory Infections Conditioned by Sulfonamides. II. Gross Alterations in the Nasopharyngeal Flora Associated With Treatment. Julianelle, L. A., and Siegel, M.: Ann. Int. Med. **22**: 10, 1945.

Prolonged treatment of physically normal children with sulfadiazine caused changes in the bacterial flora of the throat. The most striking effect of sulfadiazine treatment was a rapid disappearance of gram-negative cocci from the nasopharynx. In the majority of the treated individuals, there was a gradual return of these organisms despite a doubling of the dosage. Tests in vitro demonstrated the susceptibility of the organisms from the untreated children as compared with that of the organisms from the treated children. The effect on hemolytic streptococci was not conclusive, but the data suggested a partial inhibitory action by the sulfadiazine. H.

Rhinitis Vasomotoria Due to Imbalance of the Endocrine Glands. Laub, G. R.: Laryngoscope **55**: 179, 1945.

Endocrinologic disturbances may result in vasomotor rhinitis. The climacteric in man as well as in woman is a period during which nasal symptoms may develop. Two other periods in the life span when these symptoms tend to occur are at adolescence and during the eighth decade. The administration of small doses of testicular or ovarian extract was found to improve the condition. Disturbances in the thyroid, parathyroid, or the pituitary gland may result in vasomotor rhinitis. A careful history, basal metabolism determinations (repeated after the ingestion of protein) and trial treatment aid in determining the gland involved. Four cases of vasomotor rhinitis, two with concomitant asthma, are presented to illustrate the excellent results obtained with endocrine therapy. F.

Miscellaneous Allergies

Report of a Case of Spontaneous Animal Allergy. Moreno, G. D., and Bentolila, L.: Ann. Allergy **1**: 61, 1945.

The occurrence of perennial nasal allergy and eczema in a dog is reported. Positive reactions to several foods and to house dust were obtained by direct and indirect skin testing. Two hours after the direct tests were performed, the animal developed pruritus, erythema, and a reactivation of the eczematous lesions. Tachycardia, dyspnea, and oliguria also occurred and lasted for twenty-four hours. The administration of epinephrine stopped the reaction. The elimination of the suspected foods cleared all symptoms. This is reported as an example of atopy occurring in an animal. F.

Sensitivity to Hapamine. Neuritis Occurring During Treatment With Hapamine. Epstein, Stephan: International Correspondence Club of Allergy **8**: 56, 1945.

Two cases of neuritis occurring during treatment with Hapamine are reported. The first patient, a girl, 18 years of age, had an atopic dermatitis. After approximately eight weeks of treatment with Hapamine, she developed a severe neuritis and an incomplete radial paralysis of the right arm. The second patient, was a man, aged 29 years, who had a severe generalized dermatitis which had begun shortly after he had received a prophylactic serum injection after a compound fracture. Following an injection of staphlococcic toxin a severe flare-up of the dermatitis occurred. Slight improvement followed penicillin therapy. Hapamine therapy was begun, and several weeks later the patient developed constant pain on the left side of his neck radiating to the shoulder. A diagnosis of neuritis was made.

The author suggests that patients be tested intracutaneously with dilutions of Hapamine and also with purified horse serum protein before Hapamine therapy is instituted. He has never observed any reactions from Hapamine treatment when the preliminary tests were negative. Two instances of skin sensitivity to Hapamine are related. One subject was extremely skin-sensitive to Hapamine and yet showed only slight skin reactions to histamine, horse dander, and refined horse serum. A second subject showed moderate skin reactions to Hapamine, histamine, and horse serum and yet tolerated Hapamine therapy without any reactions. A.

The Coincidence of Allergic Disease, Unexplained Fatigue and Lymphadenopathy; Possible Diagnostic Confusion With Infectious Mononucleosis. Randolph, T. G., and Hettig, R. A.: Am. J. M. Sc. **209**: 306, 1945.

A survey conducted among one hundred forty nurses revealed that 59.2 per cent had a past history of allergic disease as determined by the criteria suggested by Vaughn. A large percentage of the group complained of fatigue unrelieved by adequate rest and gave a history of intermittent, spontaneous enlargement of the cervical lymph nodes. These symptoms associated with the presence of atypical monocytes had led to an incorrect diagnosis of infectious mononucleosis in 31.5 per cent of the nurses with an allergic background. However, the same diagnosis had been made in only 3.6 per cent of those with a negative history for allergy. It is suggested that unexplained fatigue is a constitutional symptom of uncontrolled allergy. The lymph node enlargement so frequently seen in these individuals may be evidence of a generalized lymphoid hyperplasia which is believed to be part of the allergic response particularly common in younger individuals. The presence of the atypical lymph cells resembling those seen in infectious mononucleosis may be a result of this lymphoid hyperplasia.

Abdominal Pain in Children Due to Allergy. Ratner, Bret: J. A. M. A. **127**: 696, 1945.

Abdominal pain in children may be due to food allergy. Smooth muscle spasm, wheal formation, and edema are all significant factors in the pathogenesis of the allergic reaction in the gastrointestinal tract. These disturb-

ances may be followed by vascular reactions of the submucosa and serosa which pave the way for bacterial invasion and may result in surgical conditions. Any portion of the gastrointestinal tract may be affected.

Skin tests with offending foods are frequently negative, particularly when there is no accompanying cutaneous or bronchial involvement. The pain produced by the allergic reaction usually occurs promptly after the ingestion of the food but may be delayed for an hour. It is of variable duration. A past history of colic and vomiting during infancy and an associated dermal or respiratory allergy are often present. The pain usually occurs in the region of the umbilicus and is cramplike in character. Diarrhea, nausea, and vomiting may also be present. The eosinophile count may be increased in chronic cases. Ephedrine, epinephrine, or atropine may relax an allergic spasm and clarify the diagnosis. Roentgen examination may also be of assistance. F.

The Growth and Development of Allergy. Clein, N. W. Ann. Allergy **3**: 1, 1945.

The clinical course of one hundred allergic infants was followed over a period of ten years. In 82 per cent, the first allergic symptom appeared before the fourth month of age. Orange juice was the most frequent cause of eczema and milk and oranges were the chief causes of vomiting and pylorospasm. The earliest symptom was a rash in fifty-three of the infants, vomiting in thirty-six, and gastrointestinal distress in thirty-two. In spite of early diagnosis and prophylactic measures, 76 per cent developed a major allergy before the fifth year, 85 per cent before the sixth year, and 98 per cent before the tenth year. Perennial allergic rhinitis developed in 59 per cent of the group. Pollinosis was present in 38 per cent. One-half of the pollen cases also had perennial rhinitis, one-third had eczema, and one-quarter had asthma. Asthma occurred in twenty-six patients, ranging in age from one month to twelve years. Eczema occurred in thirty-three patients, of whom two-thirds had rhinitis, one-third had pollinosis, and one-fourth had asthma. Only seven patients in the entire group had eczema without an associated allergy. Gastrointestinal allergy was present in twenty cases. Ten of the children had hives at some time during the period of observation. F.

The Roentgen Features of Eosinophilic Infiltration of the Lungs. Hennell, H., and Sussman, N.: Radiology **44**: 328, 1945.

The clinical and radiologic findings in Löffler's syndrome are reviewed, and five case reports are presented. Three of these represent the usual benign type of the disease. Two ended fatally and are presented as examples of a more malignant form of the condition. In the two latter cases, the symptoms were highly suggestive of periarteritis nodosa and in the one instance in which a biopsy was done the necrotizing lesions of periarteritis nodosa were found. On roentgenologic examination, the pulmonary lesions are of homogeneous density and of variable size. They may simulate tuberculous suppurative bronchial pneumonia or phases in the course of Boeck's sarcoid. Narrow platelike homogeneous densities are frequently seen extending obliquely caudad and laterally, a type of shadow which seems to be unique to the condition. F.

Sulphonamide Allergy—The Persistence of Desensitization. Park, R. G.: Brit. M. J. **2**: 816, 1944.

The author states that for eighteen months he has been consistently able to desensitize sulfonamide-sensitive cases. The drug is given orally, starting with a dose which gives no untoward effects and doubling this daily as long as the patient's tolerence permits. A case report is presented of a sulfanilamide-sensitive patient with fever, rash, and joint pains who was desensitized over a period of six weeks. At the end of this period, he was able to take 1 Gm. of sulfanilamide four times a day. One year later he was found to be sensitive again to sulfanilamide but less so than before the desensitization.

E. Kailin.

Allergic Manifestations of the Newborn Period. Campbell, G. A.: Canad. M. A. J. **52**: 280, 1945.

A variety of signs which should make one suspicious of potential allergy may occur in the newborn period. The results of questionnaires sent to six hundred obstetricians, allergists, and pediatricians suggested that any one of many signs may indicate that the infant is potentially allergic. The reports included anaphylactic shock from human milk, retro-auricular intertrigo, infantile eczema, cough, vomiting, wheezing, seborrhea, intestinal bleeding after feeding cow's milk, geographical tongue, excessive rubbing of the nose, urticaria, asthma in a breast-fed baby, excessive sneezing, edema of the hands and feet, etc.

An analysis of the histories of two hundred cases observed by the author of allergy in late infancy and childhood revealed that 25 per cent of them had shown allergic symptoms during their newborn period which might have been easily recognized. Twenty-four case histories are cited. Two cases of extreme sensitivity to human milk in newborn infants are recorded. A.

Anaphylaxis

Sensitization to Ragweed Extract and the Production of Antibodies by Means of Adjuvants. Kulka, A. M., and Hirsch, Dorothy: J. Immunol. **50**: 127, 1945.

Rabbits and guinea pigs sensitized with a mixture of ragweed pollen extract, killed tubercle bacilli, paraffin oil, and Aquaphor developed sensitivity to ragweed more rapidly and to a more marked degree than control animals sensitized with ragweed extract alone. Furthermore, the antibody level was more sustained in the group sensitized with the aid of adjuvants. A cutaneous test with ragweed extract resulted in an erythematous reaction when read at one hour and at twenty-four hours. The intensity of the cutaneous response paralleled the precipitin titer. The sera sensitized smooth muscle and passive sensitization was demonstrable by the Dale technique. When a cutaneous site of a normal guinea pig was sensitized with rabbit antiserum, an injection of ragweed antigen elsewhere after a twenty-four-hour interval produced an erythema and edema at the sensitized site within fifteen to thirty minutes. In four cases, rabbit antiragweed serum was injected into human skin and the sites were tested twenty-four hours later with ragweed pollen extract. Two of these tests gave positive reactions within fifteen minutes and one gave a faintly positive response after forty-eight hours. A high percentage of sensitized rabbits reacted with dyspnea, wheezing, and jumping to the inhalation of ragweed antigen administered by a spray. Such reactions could not be correlated with the precipitin titers or cutaneous sensitivities. The question of whether reagins were formed in addition to the precipitin antibodies is discussed. E. Kailin.

The Action of Histaminase in Vivo. Lemley, J. M., and Laskowski, M.: Arch. Biochem. **6**: 115, 1945.

In order to demonstrate the activity of histaminase in living animals the amount used must be great enough to destroy at least half of the active dose of histamine in the interval of time between introduction of histamine and the onset of symptoms. The contradictory reports in the literature concerning the action of histaminase in vivo are of little value since the amounts of histaminase employed were much too small to be effective.

Guinea pigs were injected intraperitoneally, intracardially, or intravenously with one and a half times the lethal (experimentally determined) dose of histamine dihydrochloride. Histaminase in variable large doses was injected either intracardially or intravenously immediately preceding the administration of histamine. In a control group of ten animals that received only histamine, no animal survived longer than thirty minutes. In a group of thirteen

animals that received histaminase immediately before the histamine injection, six animals survived longer than thirty minutes and four of these six survived indefinitely. The remaining animals died within three days, and all but one showed massive intrapericardial hemorrhage. Of four animals that received histaminase alone, only one survived longer than three days. The others showed symptoms similar to those seen in the unsuccessfully protected animals of the histamine-histaminase group. On autopsy, they also showed massive pericardial damage.

It was concluded that histaminase in its present state of development is highly toxic when injected into animals. Adequate protection would require doses of histaminase which could not be attained with the present preparation.

A.

The Anti-Histamine Activity of Diethylaminoethyldihydroanthracine-Carboxylate and Other Substances. Lehmann, G., and Young, J. W.: J. Pharmacol. & Exper. Therap. **83**: 90, 1945.

One hundred one guinea pigs, sensitized with egg white, were given shocking doses of various strengths of the antigen thirty minutes following the intravenous injection of Diethylaminoethyldihydroanthracine-, Xanthin-, or Fluorene-, Carboxylate. One hundred per cent of the animals were protected by the Dihydroanthracine compound against a dose of antigen which was lethal for 90 per cent of the control group and 27 per cent were protected against doses twice and one hundred times as strong. The other substances studied afforded less protection. The protective action is presumed to be due to an antihistamine effect on smooth muscle rather than to interference with the antigen-antibody reaction. D. also reduced the volume but not the acid concentration of histamine-induced gastric secretion and diminished the cutaneous reaction of histamine. Resistance of the pulmonary circulation of the isolated perfused guinea pig lung is reduced by aminophylline and D. D. was found to be a less potent bronchial dilator than aminophylline. F.

The Inhibition of Histamine Release by a Pituitary-Adrenal Mechanism. Ungar, G.: J. Physiol. **103**: 333, 1944.

The bloods of normal rabbits, guinea pigs, and rats, when mixed in vitro with peptone, release amounts of histamine which are constant for the species. In guinea pigs treated with peptone, the release of histamine in vitro is less than in controls. In the blood of guinea pigs which are anesthetized and subjected to trauma, histamine release in vitro by peptone was diminished for a period of time beginning four hours after the trauma and lasting up to nineteen days, depending on the amount of trauma and the time needed for healing of the wound. In ether-anesthetized animals the histamine release was small but became normal after one hour.

The factor inhibiting histamine release by peptone was present in the serum of traumatized animals. The injection into normal animals of sera taken from sensitized animals three to twenty-four hours after anaphylactic shock inhibited the histamine release. The amount of inhibiting factor in the postanaphylactic serum was less than 1 per cent of that in the serum of a traumatized animal. Inhibiting substance appeared in animals four to twenty-four hours after an injection of peptone. Histamine release was also inhibited by adrenalin, local anesthetics, and ascorbic acid.

In rats the adrenal glands are not essential for the production of the inhibiting factor. However, hypophysectomized rats lack the inhibiting factor. Crude adrenal and pituitary extracts added to normal blood are strong inhibitors of histamine release. Liver extract lacks this property. Purified adrenal and pituitary extracts are less effective than crude extracts. Desoxycorticosterone is inactive. Crude adrenal extract is about 100 times as active as cortical extract. The most active product tested so far is a corticotrophic hormone. The evidence suggests that the inhibitory substance is produced by the pituitary gland and acts through the adrenals which then affect the blood cells so as to inhibit histamine release.

The phenomena described may be related to Selye's findings of clinical adaptation and of enlarged adrenal cortices in animals which experienced the effects of protein breakdown products produced by formaldehyde injections, trauma, and burns. E. Kailin.

The Chemistry of Allergens. IX. Isolation and Properties of an Active, Carbohydrate-Free Protein From Castor Beans. Spies, J. R., Coulson, E. J., Chambers, D. C., Bernton, H. S., and Stevens, H.: J. Am. Chem. Soc. **66**: 748, 1944.

A protein-polysaccharide allergenic fraction, CB-1A, had previously been isolated from castor bean. The carbohydrate portion has since been almost completely removed, and a protein fraction, CB-65A, containing only a faint trace of carbohydrate, has been obtained. The technique for the isolation of this fraction is described in detail. Passive transfer studies with a serum containing reagins for castor bean showed that fraction CB-65A produced a whealing reaction as strong as that produced by CB-1A. Tests on guinea pigs revealed that CB-1A was eleven times more potent as a sensitizing agent than CB-65A. However, the median lethal shocking dose of CB-65A and of CB-1A was the same. These results parallel the authors' previous experience with cottonseed fractions, in that sensitization with that antigen, but not the final shocking dose, was also enhanced by the presence of polysaccharide. The role of polysaccharide in relation to the castor bean antigen is discussed. E. Kailin.

Alleviation of Anaphylactic Shock in Guinea Pigs With Synthetic Benzhydryl Alkamine Ethers. Loew, E. R., and Kaiser, M. E.: Proc. Soc. Exper. Biol. & Med. **58**: 235, 1945.

The alleviation of anaphylactic shock in guinea pigs by synthetic benzhydryl alkamine ethers was investigated. These compounds had been found to be effective in alleviating histamine-induced asthma in guinea pigs. Animals were passively sensitized with rabbit antiovalbumin serum. Twenty-four hours hours later, they were shocked by the intravenous injection of crystalline ovalbumin. Fifteen minutes prior to the shocking dose, an intraperitoneal injection of aminophylline or synthetic benzhydryl alkamine ethers was administered. The results indicated that aminophylline in high dosage and n-Phenyl-n-ethyl-n-diethylene diamine hydrochloride (1571 F) have antianaphylactic actions. Beta-dimethylaminoethyl benzhydryl ether was found to be twice as active as Beta-morpholinoethyl benzhydryl ether in alleviating anaphylactic shock. It was also shown that Beta-dimethylaminoethyl benzhydryl ether gave protection against intravenous injections of histamine or the inhalation of atomized histamine solutions. Synthetic benzhydryl alkamine ethers were twice as effective as 1571 F in alleviating the bronchoconstriction induced in guinea pigs by the inhalation of atomized histamine. The histamine-antagonistic properties of the benzhydryl ethers should prove of value in investigating the role of histamine in various physiologic mechanisms and pathologic conditions. A.

Miscellaneous

Weather and Susceptibility in Relation to the Spread of Common Cold; Effect of Ascorbic Acid, in Massive Dosage, on Duration. Brown, W. B., Mahoney, F., Niedringhaus, A., and Locke, A.: J. Immunol. **50**: 161, 1945.

The relationship of weather and susceptibility to the spread of the common cold was investigated over a period of a year in a group of 1,600 college girls. The effect of massive doses of ascorbic acid on the duration of the common cold was also studied.

An increase in the number of new colds occurred during periods of falling temperature accompanied by heavy rains. This was particularly noticeable among the most susceptible members of the group, that is among those with the highest average number of colds for the year. Smokers showed an in-

creased tendency toward colds. In nonsmokers there was a slower, less sustained and less pronounced response to weather changes. Rises in cold incidence precipitated by weather changes usually began twenty-four to forty-eight hours after the beginning of the weather change and persisted twenty-four to forty-eight hours after its cessation. In fall colds nasal symptoms predominated, while in winter colds throat involvement was most prominent. Winter colds were mainly second and third rather than first colds.

Based on the concept that, in the common cold, there is a virus invasion followed by bacterial invasion, ascorbic acid, to be effective, should be administered early, since it presumably acts only against the virus. A.

Studies on Inflammation. V. Observations on the Kinetics of Cellular Cathepsin II From Organs of Normal Rabbits and Those Infected With Virulent and Non-Virulent Tubercle Bacilli. Weiss, C., and Halliday, N.: J. Immunol. **49**: 251, 1944.

Cathepsin II is a proteolytic enzyme which in this experiment is isolated from rabbit tissues. The normal tissue content of cathepsin, listed in the order of diminishing activity, is spleen, liver, kidney, and lung. Those organs which have a greater natural immunity to the tubercle bacillus have a greater enzymatic activity. When the animal is immunized with an avirulent strain of tubercle bacilli there is little inflammation and no increase in cathepsin activity, but when a highly virulent culture is then injected there is accelerated local inflammatory response and an increase in cathepsin in the spleen, lungs, and kidneys. This increase is greater in the lungs and kidneys, organs which benefit more from the process of immunization than the liver and spleen which possess a higher degree of natural immunity and a higher original catheptic activity. E. Kailin.

Inflammation. VII. Selective Inhibitory Action of Tuberculo-Carbohydrate and Phosphatide on Cellular Cathepsins From Tuberculous Tissues. Weiss, C., and Halliday, N.: Proc. Soc. Exper. Biol. & Med. **57**: 299, 1944.

Tuberculo-phosphatide inhibits cathepsin derived from tuberculous tissues of rabbits to a much greater degree than cathepsin derived from livers of normal animals. The greatest inhibitory effect of the phosphatide was exerted on the cathepsin derived from livers of animals infected with nonvirulent tubercle bacilli. Tuberculo-carbohydrate did not inhibit normal liver cathepsin but showed marked inhibition of cathepsin derived from tissues of tuberculous animals, particularly those infected with virulent strains.

Cathepsin is the endocellular proteolytic enzyme concerned with cellular growth and repair. It is suggested that the cytotoxic action of tuberculin, as shown by tissue culture explants, may be due to the inhibitory action of tuberculo-phosphatide and tuberculo-carbohydrate on this enzyme system. Interference with the proteolytic enzyme system may also explain the failure of autolysis of caseous tuberculous tissue. E. Kailin.

Immunity to Tetanus Induced by a Third Dose of Toxoid Four Years After Basic Immunization. Peshkin, M. M.: Am. J. Dis. Child **69**: 83, 1945.

Twenty-five allergic children were given a third or "booster" dose of 0.5 c.c. of alum-precipitated tetanus toxoid, after having been basically immunized with two 0.5 c.c. doses of combined alum-precipitated diphtheria and tetanus toxoids four years previously. The antitoxin level of the blood was determined at various intervals before and after the administration of the booster dose. Within seven days following the booster dose, the tetanus antitoxin level of the blood was adequate for protection and increased gradually reaching its maximum within one month. A few local reactions were noted after the booster dose. There were no febrile or constitutional reactions. The antitoxin titer, which followed the administration of a booster dose of alum tetanus toxoid four years after basic immunization, was higher and lasted longer than that observed when the booster dose was administered from three to fifteen months after basic immunization. It was comparable to that ob

tained when the booster dose was administered two years after basic immunization. The highest antitoxin values thus far obtained occurred when the booster dose was administered three years after initial immunization. Scratch tests performed with undiluted combined alum-precipitated diphtheria and tetanus toxoids or with alum-precipitated tetanus toxoid were negative before and from one to six months after the administration of the booster dose. The incidence of local and systemic allergic reactions is at a minimum when the booster dose, administered two to four years after basic immunization with two doses of combined alum-precipitated diphtheria and tetanus toxoid, consists of alum-precipitated tetanus toxoid alone. A.

Quantitative Relations Between Horse Hemoglobin and Anti-Hemoglobin: The Condition of Antigenicity. Boyd, W. C., and Malkiel, S.: J. Infect. Dis. **75**: 262, 1944.

The addition of a good antigen, such as killed *Monilia* in 0.1 per cent to 0.2 per cent suspension, to a poor antigen such as hemoglobin, enhances the antibody response to the latter. Precipitin studies were done on the antiserum thus obtained. Iron and nitrogen determinations permitted exact quantitative measurement of the antigen and the antibody present in the various experimental solutions and precipitates. The addition of hemoglobin to the precipitated hemoglobin-antihemoglobin complex, dissolved this precipitate. Some previous findings were confirmed. When antibody is added to a fixed excess of antigen, an insoluble complex is formed, the antibody content of which bears a linear relationship to the amount of antibody added. The amount of the antigen remaining in the above supernate may be reliably calculated from a formula of Hooker and Boyd. There is also a linear relationship between the times of flocculation and the amounts of antigen added to an excess of antibody. E. Kailin.

Liberation of Histamine During Reactive Hyperaemia and Muscle Contraction in Man. Anrep, G. V., Barsoum, G. S., Salama, S., and Souidan, Z.: J. Physiol. **103**: 297, 1944.

Experiments on dogs show that complete venous or arterial compression results in a reactive hyperemia and a rise on the histamine content of the plasma. In man, muscular contraction, arterial occlusion, or prolonged venous congestion is likewise accompanied by histamine release. This is considerably greater following vigorous muscular contractions than following arterial occlusion of the same duration. In most subjects, the rise of histamine occurs only in the plasma. With the arm compressed by a sphygmomanometer at a pressure of 120 mm. Hg, the histamine content of the plasma is 0.012 micrograms and of the corpuscles 0.130 micrograms. After fifteen hand and forearm contractions, at the rate of one every two seconds, the plasma histamine reading rises to 0.085 micrograms and that of the corpuscles to 0.140 micrograms. However, when the histamine of the corpuscles is lower than normal, there may be an increase in this histamine content as well. E. Kailin.

Effects of Continuous Intravenous Administration of Histamine on the Blood Pressure and Pulse Rate in Cases of Multiple Sclerosis. Benson, A. J., and Horton, B. T.: Proc. Staff. Meet., Mayo Clin. **20**: 113, 1945.

Histamine diphosphate in a 1:250,000 dilution was administered by the intravenous drip method. The solution was given at the rate of 120 to 150 drops per minute (0.03 to 0.04 mg. of histamine base). Control studies were made with physiologic saline administered intravenously. A rise in the pulse rate (23 to 39 beats per minute) and a slight but definite drop in diastolic blood pressure was evident during the intravenous histamine administration. The blood pressure returned to its original level within ten minutes after discontinuance of the drug. The pulse rate also returned quickly to its previous level. Approximately the same findings obtained irrespective of the number of intravenous injections of histamine which a given patient received. H.

Allergy Abstracts

Asthma and Hay Fever

Penicillin in the Treatment of Intractable Bronchial Asthma. A Preliminary Report. Leapold, S. S., and Cooke, R. A.: Am. J. M. Sc. **209**: 784, 1945.

Two cases of intractable asthma, intrinsic in nature, were treated with penicillin. In one case, there was complete remission of subjective symptoms for four months although sibilant râles persisted. Following an upper respiratory infection, the asthma reappeared, but was controlled by sulfonamide therapy. The other case has remained symptom-free for four months. Twenty-five additional cases are being studied at the present time. Some of these have shown favorable results, others have not responded. F.

Rectal Instillation of Aminophyllin in Intractable Asthma. Barach, A. L.: J. A. M. A. **128**: 589, 1945.

For the rectal instillation of aminophylline in intractable bronchial asthma, a No. 12 French catheter, a rubber tube connection, and a 20-c.c. syringe yield satisfactory results. This method is practical, and it is easy for a nurse or the patient himself to administer the solution. While relief does not occur so rapidly or so regularly as with intravenous administration, the side effects of the drug are less pronounced. F.

Severe Asthmatic Dyspnea as the Sole Presenting Symptom of Generalized Endolymphatic Carcinomatosis. Mendeloff, A.: Ann. Int. Med. **22**: 386, 1945.

Two case histories are presented of women whose complaint on hospital admission was progressive dyspnea associated with wheezing, cough, fever, and cyanosis. In one there was a history of hay fever. X-rays revealed a diffuse haziness of the lungs in both cases. Diffuse carcinomatosis of the lungs was found at autopsy. The primary cancer was gastric, in one case, while in the other it presumably arose in aberrant pancreatic tissue. The literature is reviewed. E. Kailin.

Asthma Caused by Complex Salts of Platinum. Hunter, I., Milton, R., and Perry, K. N.: Brit. J. Indust. Med. **2**: 92, 1945.

The authors describe a syndrome consisting of rhinorrhea, sneezing, tightness of the chest, shortness of breath, wheezing, and cough. This combination of symptoms was observed in fifty-two of ninety-one workers exposed to the dust or spray of complex salts of platinum. Thirteen of the patients also presented a scaly, erythematous dermatitis. No symptoms were observed in workers exposed to high concentrations of metallic platinum or complex salts of other metals, e.g., palladium. Radiologic and blood studies in the patients presenting this syndrome were essentially negative. H.

Bronchial Asthma and Tuberculosis. Herbut, P. A.: Arch. Path. **39**: 338, 1945.

Little information is available on post-mortem studies of the bronchial tree in patients suffering from both bronchial asthma and tuberculosis. Such a case is presented. Pathologic changes typical of bronchial asthma were found in the lungs. Histologic studies of the mucosa of the nose and maxillary sinuses revealed findings identical with those found in the mucosa of the lower respira-

tory tree. Tuberculosis was not diagnosed clinically but purely on the presence histologically of granulomas throughout the walls of the smaller bronchi and bronchioles. The diameters of the terminal bronchi were narrowed by the tuberculosis and by the bronchial asthma. In this way, the tuberculosis can be said to have aggravated the bronchial asthma in this case. H.

Asthma Syndrome Associated With Anoxemia, Hepatic and Renal Involvement. Harkavy, Joseph: J. Mt. Sinai Hosp. **12**: 277, 1945.

A 46-year-old white woman, presenting symptoms suggestive of asthma and status asthmaticus for several months, went into coma following the administration of sedatives. Shortly before death, there was evidence of anoxemia, renal insufficiency, and jaundice. At autopsy, a pedunculated cylindroma of the trachea, ensheathing the vagus nerve, was found. Other pathologic findings were encephalomalacia, tubular degeneration of the kidneys, and central necrosis of the liver cords. The entire pathologic and clinical picture could be correlated with a state of anoxia which was probably the result of bronchospasm due to the vagal irritation by the infiltrating tumor and of broncho-obstruction of the ball-valve nature by the pedunculated segment of the tumor. The pseudo-asthmatic state was apparently caused by a combination of constriction and mechanical obstruction of the bronchi. A.

Eosinophilic Pneumonitis (Löffler's Syndrome) With Response to Emetine. Randall, T.: Brit. J. Tuberc. **39**: 37, 1945.

A case with typical clinical and radiological findings of Löffler's syndrome is reported. Ten daily intramuscular injections of emetine produced a dramatic clearing of all symptoms. The question is raised whether such cases, when they occur in districts where amebiasis is endemic, may not be of amebic origin. H.

Dermatology

Cutaneous Reactions of Persons With Atopic Eczema to Human Dander. (Results of Patch Tests on Scarified Skin). Simon, F. A.: Arch. Dermat. & Syph. **51**: 6, 1945.

Ten patients ranging in age from 14 to 44 years who had atopic eczema were scratch tested and patch tested with human dander obtained from normal scalps. The dander was extracted with ether, dried, and then extracted with two volumes of 50 per cent glycerin. The extract was employed in 1:10 and 1:100 dilutions for scratch testing. For patch testing, the human dander was mixed with equal parts of petrolatum.

The ten patients studied had atopic eczema; most of them had it since infancy. All had positive family histories for atopy, and nine showed positive skin reactions to foods or inhalants. Positive reactions were obtained in two of the ten patients within forty-eight hours after patch tests with human dander were applied to normal skin of the back. In a third individual, the patch test was positive after remaining on the skin for seven days. Mixtures of dander in petrolatum or in soap solution were massaged into the skins of the ten patients. Positive reactions consisting of papules were observed in three of the subjects. A third type of test was the so-called patch on scratch test. Three scratches about 5 mm. long and 1 to 2 mm. apart were made superficially in the skin of the back. A patch was applied immediately over the scratches and was allowed to remain for forty-eight hours. Eczematous reactions were noted in nine of the ten patients. The lesions consisted of papules, vesicopapules, crust formation, redness, and swelling. The papules were located in and immediately adjacent to the scratches. Desquamation occurred within one or two weeks. In ten normal noneczematous controls, negative reactions were obtained with human dander. However, in a few of the controls, a slightly erythematous reaction was noted at the sites of the patch on scratch tests. This reaction was regarded either as a result of a primary irritation or as a manifestation of subclinical hypersensitiveness to an allergen in human dander. It was concluded that human dander is an important allergenic excitant of atopic eczema. A.

Spread of Dermatitis Venenata by Vesicle Contents. Pratt, A. G., and Corson, E. F.: Arch. Dermat. & Syph. **51**: 5, 1945.

The spread of poison ivy dermatitis by vesicle contents was investigated. Patch tests with poison ivy extract were made on a group of eighty-seven young men. In seventeen whose reactions were vesicular, the vesicle fluid of the affected arm was used to patch test the normal arm. The results of this experiment were negative. In fourteen other individuals, their vesicle fluids were used to test their normal arms and to patch test other individuals who were known to be susceptible. One individual gave a positive reaction to the fluid from his own vesicle seven days after application. In no instance was a positive reaction transferred to susceptible individuals by vesicle fluid.

In another series of ten individuals with naturally acquired dermatitis venenata, uncleaned lesions were punctured with a hypodermic needle and the contents were used for patch testing clear areas of the skin. All the tests yielded negative results. Hence, the vesicle fluid of poison ivy dermatitis did not produce new lesions on the same individuals or on other susceptible persons. An occasional positive result was attributed to contamination of the vesicle fluid by the poison ivy extract. A.

Gastric Secretion in Infantile Eczema. Strickler, A., Herman, A., and Grumach-Fabian, H.: Arch. Dermat. & Syph. **51**: 189, 1945.

The gastric secretion of fifty eczematous children, ranging in age from 9 months to 12 years. was investigated in an effort to determine why some cases of eczema respond favorably following the administration of large doses of dilute hydrochloric acid. The free hydrochloric averaged 24.8 units and the total acidity was 49.6 units. Normal controls showed an average free acidity of 23.3 units and a total acidity of 43.3 units. It was concluded that the gastric secretion in eczematous children does not differ significantly from that in normal controls. A.

Status of Poison Ivy Extracts. Stevens, F. A.: J. A. M. A. **127**: 912, 1945 (Report of the Council of Pharmacy and Chemistry).

The many species of poison ivy, oak, or vine, which are described as native to North America, fall into three groups, classified as *Toxicodendron*. The poisonous material in ivy has been chemically identified as urushiol. This chemical is also the active principle in the sap of lac trees and is very likely the irritant common to this entire group of plants. The most satisfactory material for extracting this active principle appears to be ether. It readily dissolves the urushiol, while at the same time precipitating the coexisting enzymic material, laccase, which is responsible for hastening oxidation of the urushiol. Experimental sensitization may be effected with plant extracts and with urushiol. Sensitivity, whether induced or naturally acquired, tends to diminish in intensity unless there is repeated exposure. Oral and intramuscular administration of various types of extracts have been employed in attempts to desensitize susceptible individuals. The most successful method appears to be the daily ingestion of increasingly large doses, which temporarily increase tolerance and reduce the skin reaction. However, this form of treatment produces skin rashes and gastrointestinal upsets in a large percentage of cases and is unacceptable for general use. Smaller dosage orally is ineffective. Intramuscular administration seems temporarily to increase the resistance of susceptible individuals to moderate exposure. However, no apparent change in the patch test reaction accompanies this increase in tolerance, and the clinical effectiveness of this form of treatment is still disputed. Standardization of ivy extracts has not been satisfactory, but some extracts of considerable uniformity have been obtained by experienced workers as shown by the results of patch tests. By testing patients with varying strengths of the extract prior to treatment, the level of the initial dose may be determined, and a satisfactory dosage schedule may be outlined. This procedure is not feasible when commercial extracts are employed. Commercial extracts must

have as their initial dose one adapted to the most sensitive individuals in the population. Phylactic treatment with the extracts has been disappointing. No satisfactory evidence has ever been presented to show that the clinical course of the disease has been favorably influenced by extract therapy given after the rash has appeared. Many patients are made worse by it. F.

Bullous Dermatitis (Dermatitis Medicamentosa) From Penicillin. Morris, G. E., and Downing, J. G.: J. A. M. A. **127**: 711, 1945.

Reactions from penicillin may be due to the drug itself or to toxic impurities contained in an individual batch of the material. The authors report a case of bullous dermatitis in a 56-year-old man who had received one million units of penicillin postoperatively for an infection. Four days after the last injection the patient developed a pruritus of the left hand and arm, followed in twenty-four hours by edema of these parts and the left side of the trunk. A tense pitting edema, accompanied by erythema and bullae, involved the entire left hand and forearm. The dermatitis persisted for four or five days. F.

Allergy in Malarial Infection. Mojumdar, N. G.: Calcutta M. J. **41**: 240, 1944.

Protozoal infections are usually not accompanied by allergic manifestations, although urticaria or asthma have been observed in malarial attacks. Because of the rarity of the condition, the author reports two cases of urticaria accompanying malarial infection. The first patient, a Hindu female, developed a sudden attack of fever and cough without chills. On the fourth day, an urticarial rash appeared and spread over the entire body. A diagnosis of malaria was made from blood slides. The patient was given quinine and the rash disappeared rapidly and the fever subsided. The second patient had an attack of fever, accompanied by chills and a generalized urticaria. The rash subsided within twenty-four hours following the institution of quinine therapy. It is suggested that the liberation of merozoites in the blood and their subsequent breakdown introduces a large amount of protein in the circulation which induces sensitization. A.

Inactivation of the Irritant Toxicants of Poison Ivy and Related Compounds by Tyrosinase. Sizer, I. W., and Prokesch, C. E.: Science **101**: 517, 1945.

Certain skin irritants of poison ivy, oak, and related *Anacardiaceae* have been synthesized in recent years. These compounds are mainly phenols and catechols. The toxic properties of the molecule are, in part, related to the hydroxide groups in the ring. Treatment with strong oxidants, e.g. ferric chloride, has been based on this chemical finding. The authors investigated the possibilities of obtaining similar results by using innocuous enzymes. Studies were made on the effects of a very active and highly purified mushroom tyrosinase on a large number of partially purified and concentrated commercial ivy extracts as well as on pure compounds related to the active principle, urushiol. The addition of enzymes to such compounds resulted in increased oxygen consumption. The solution darkened as a result of enzymatic oxidation of the phenolic groups to quinones. Comparative patch tests with enzyme-treated and untreated ivy compounds on sensitized human and guinea pig skin showed a partial or complete loss of activity in the enzyme-treated material. The simultaneous application for four hours of poison ivy extract and tyrosinase produced a milder dermatitis than the application of poison ivy and inactivated tyrosinase. The significance of these findings in the treatment of poison ivy dermatitis is discussed. H.

Hospital Morbidity and Mortality in Infantile Eczema. A Report of 100 Hospitalized Cases of Infantile Eczema Without Deaths. Epstein, S.: J. Pediat. **26**: 541, 1945.

One hundred consecutive cases of various types of infantile eczema were hospitalized without fatality. The twenty-three complications occurring in the group were seen almost exclusively among children with the atopic type of

dermatitis. The complications were mostly infections of the respiratory or gastrointestinal tracts which were secondary to allergic involvement of these systems. Skin infections were seen among both the atopic and nonatopic groups. The complicating infections were controlled with sulfonamides which, along with good nursing care, were the factors responsible for the excellent results. Sudden deaths among eczematous infants, such as had been reported elsewhere, did not occur in this series. Such deaths are believed to be due to the injudicious use of coal tar ointments which may produce phenol poisoning. Because of the danger of such poisoning, tar ointments should never be applied over large areas of body surface, especially when the skin is eroded. F.

Insulin Shock in the Treatment of Urticaria. Bartelheimer, H.: Munchen. med. Wchnschr. **91**: 286, 1944.

Several hundred cases of acute urticaria were treated by insulin shock with good results. Thirty to forty units of insulin, injected subcutaneously, produced satisfactory hypoglycemic symptoms. The intravenous administration of ten to sixteen units of insulin is more satisfactory. This treatment is not advised for the urticaria of serum sickness or for patients with hypertension. Small doses of insulin once or twice daily are recommended for cases of chronic urticaria, in addition to shock treatment. H.

Skin Eruptions Due to Local Application of Sulfonamides. Peterkin, G. A. G.: Brit. J. Dermat. **57**: 1, 1945.

The cases of sulfonamide dermatitis observed in North Africa seemed much more severe than those seen in England. In sixty-one of sixty-five such cases, sulfonamide powder was the first sulfa drug used. It is suggested that sensitization may occur by inhalation of the powder. Dermatitis was noted in only one of two hundred cases treated with a 5 per cent sulfathiazole ointment. H.

"Diaper Rash" Due to Perm-Aseptic. Dobes, W. L.: J. A. M. A. **128**: 281, 1945.

Five cases of contact dermatitis were traced to an antiseptic solution known as Perm-Aseptic. This material is a primary skin irritant as well as a skin sensitizer. All cases recovered when the antiseptic solution was omitted from the diaper-cleaning process. F.

Otorhinology and Ophthalmology

Nasal Allergy for the Practicing Rhinologist. Shambaugh, G. E., Jr.: Ann. Otorhinolaryng. **54**: 43, 1945.

The average case of nasal allergy can be successfully diagnosed with twenty to fifty cutaneous tests. Chronic sinus infection and 90 per cent of chronic nasal infection can be shown to have an underlying allergic factor. House dust sensitivity is considered to be the major factor in most nasal allergy. The therapeutic response to dust therapy, using dilutions of from 1:1,000 to 1:1,000,000, was satisfactory in the great majority of cases. C.

Cilia and Penicillin. A Laboratory Note. Proetz, A. W.: Ann. Otorhinolaryng. **54**: 94, 1945.

Strips of ciliated respiratory epithelium, from a rabbit, were suspended in a bath and subjected to various concentrations of penicillin at 30° C. for various time periods. The persistence of the ciliary beat was studied. The results obtained indicate that the penicillin solution recommended for local application to the nose and sinuses (250 units per milliliter of isotonic saline) has no appre-

ciable adverse effect on the respiratory ciliated epithelium. Stronger concentrations of penicillin were not so well tolerated in that they tended to impair ciliary action. C.

Miscellaneous Allergies

The Role of Hypersensitivity in the Pathogenesis of Rheumatic Fever and Periarteritis Nodosa. Rich, A. R.: Proc. Inst. Med. Chicago **15**: 270, 1945.

Eight patients developed serum (or drug) sickness shortly before death. The majority were being treated for pneumonia or meningitis. One patient was treated with serum alone, two with sulfonamide alone, and five with both serum and sulfonamide. One who received prophylactic sulfonamide therapy after an operation for scrotal carcinoma showed no lesions of periarteritis nodosa in a biopsy taken at the operation sixteen days before death. All of the above cases showed fresh lesions of periarteritis nodosa at autopsy. An additional patient with pneumonia treated with serum and sulfonamides developed serum sickness and lesions of periarteritis nodosa as shown by a biopsy. This patient recovered. One hyperthyroid patient treated with iodides developed iodide sensitivity and died after a short illness. There were lesions of periarteritis nodosa at autopsy.

The earliest pathologic change of periarteritis nodosa is a focal edema of the intima and of the underlying media of the vessel wall. It is suggested that the lesion may begin as a wheal of the arterial wall, leading to necrosis as a result of interference to nutrition by the local edema.

Periarteritis nodosa has been experimentally produced by a single intravenous injection of sterile horse serum into rabbits. Rabbits do not become sensitive to sulfonamides and these drugs do not cause periarteritis nodosa in this animal. Rabbits sensitized with a dose of horse serum or egg albumen large enough to cause an intravascular meeting of antigen and antibody develop cardiac lesions characteristic of rheumatic fever. These lesions are unlike the nonspecific inflammatory lesions sometimes found in the hearts of control animals. Valvular nodules, Aschoff bodies, focal edema of collagen, focal alterations in the cardiac muscle, focal and diffuse inflammatory lesions, and fibrosis in the reparative phase are all found in the experimental animals.

The course of rheumatic fever in human beings has many features which are suggestive of hypersensitiveness. These are discussed in detail. It is suggested that the *Streptococcus hemolyticus* may be the common antigen in rheumatic fever, with other organisms at times acting as offenders. It is further suggested that the familial incidence of rheumatic fever may be based on a hereditary immunologic predisposition. E. Kailin.

The Relation of Periarteritis Nodosa to Bronchial Asthma and Other Forms of Human Hypersensitiveness. Wilson, K. S., and Alexander, H. L.: J. Lab. & Clin. Med. **30**: 195, 1945.

An analysis of three hundred consecutive cases of periarteritis nodosa reported in the literature revealed many instances of associated atopy and "atopic-like disorders" (intrinsic allergy). The incidence of bronchial asthma with periarteritis nodosa was greater than 20 per cent among the reported cases. If urticaria, vasomotor rhinitis, and other expressions of atopy are included the incidence was more than 25 per cent. The asthma antedated the periarteritis in the majority of instances by a few years, but sometimes by only a month or two. The onset of the asthma occurred in the first two decades in 70 per cent of all cases. The severity of the asthmatic paroxysms, the rarity of extrinsic allergens as definite etiological agents, the age of onset, and the excessive eosinophilia identified most of the reported cases as nonatopic or intrinsic asthma.

The association of periarteritis nodosa with drug allergy (especially to the sulfonamides) with serum sickness, and with bacterial allergy (especially rheumatic fever), is discussed. The authors point out that periarteritis nodosa appears to be the only evident manifestation with the exception of contact dermatitis, which links together all types of human hypersensitiveness. H.

Egg Allergy; Significance in Typhus and Yellow Fever Immunization. Sprague, H. B., and Barnard, J. R.: U. S. Nav. M. Bull. **45**: 71, 1945.

Typhus and yellow fever vaccines are cultivated in chick embryo tissue. Two instances of severe allergic reactions following inoculations with these vaccines are reported. The first patient, a 20-year-old ensign, developed severe asthma, angioneurotic edema, and urticaria following his first immunizing dose of yellow fever vaccine. A past history of hay fever, eczema, and asthma was elicited. This patient gave a history of extreme sensitivity to egg and nuts. He showed marked positive skin reactions to egg white, ragweed, horse serum, et cetera. The second patient, a 23-year-old ensign, developed massive generalized edema, dyspnea, coryza, and difficulty in swallowing within two hours following an injection containing typhus vaccine, tetanus toxoid, and typhoid vaccine. He gave a past history of eczema and hay fever and of extreme egg sensitivity. It is suggested that inquiry concerning egg sensitivity should be made before the administration of typhus or yellow fever vaccine. Patients giving such a history should be tested and should be inoculated only if negative skin reactions are obtained. A.

Tropical Eosinophilia. Hirst, W. R., and McCann, W. J.: U. S. Nav. M. Bull. **44**: 1277, 1945.

A case of so-called tropical eosinophilia of unknown cause is reported. The symptoms had been present for two years. The interesting feature of this case was that the patient had never been in India. All previously reported cases had occurred or originated in the coastal areas of India. The typical syndrome, which is characterized by a gradual onset with malaise, weight loss, a low-grade temperature, a paroxysmal type of dry hacking cough, most noticeable at night or in the early morning, and physical findings similar to those seen in bronchial asthma, was noted in this case. After several weeks in the hospital, the chronic stage was reached. At this time the patient was subfebrile. The weight loss stopped, but the paroxysms of coughing and wheezing continued. An x-ray study of the chest revealed increased bronchial markings as in chronic bronchitis. The leucocyte count was 15,520 with 16 per cent polymorphonuclear leucocytes, 72 per cent eosinophiles, 9 per cent lymphocytes, and 3 per cent monocytes. The eosinophile count rose to 82 per cent. Skin and laboratory tests for parasitic infestation were negative. In view of the long duration of the symptoms neoarsphenamine therapy (previously recommended by Weingarten) was begun. The patient showed a dramatic response and within three weeks had no further symptoms and was regarded as clinically cured. The number of eosinophiles in his blood remained slightly elevated. The remarkable response to arseno therapy may indicate that tropical eosinophilia may be caused by an unknown spirochetal or protozoan infection. The authors conclude that patients with unusually high eosinophile counts of unknown cause should receive a therapeutic trial with arsenicals. A.

Certain Effects of Central Nervous System Lesions Upon Cutaneous Reactions. Bereston, E. S.: J. Invest. Dermat. **6**: 75, 1945.

Eight unilateral hemiplegic patients and fifteen patients with spinal cord lesions producing some degree of either spastic or flaccid paraplegia were studied to determine the effect of the neurological lesions on various cutaneous reactions. From twenty to twenty-five normal controls were used for each phase of the study. In comparing the responses obtained on the inner thighs and on the forearms of fifteen paraplegic persons, 60 per cent showed diminished histamine flare responses on the thighs, and 77 per cent showed diminished mecholyl pilomotor reactions on these areas. The tuberculin reaction was greater on the forearm in nine of ten tuberculin-positive paraplegic patients. No such difference occurred in twenty-five controls. The trichophyton reaction was likewise greater on the forearm in nine of fifteen trichophyton-sensitive paraplegic persons, while controls showed no difference. There was no difference in the reactions on the two forearms of the hemiplegic patients to tests with mecholyl, tuberculin, *Trichophyton*, or histamine. It is suggested that the *Trichophyton*

and tuberculin reactions are, to some degree, dependent on the integrity of peripheral nerves as are histamine and certain acetylcholine responses.

The above patients were actively sensitized by applications of 1, 2, 4, dinitrochlorbenzene to normally innervated skin of the hand. Subsequent contact dermatitis reactions were greater in normally innervated areas in all of seven sensitive hemiplegic and in ten of twelve sensitive paraplegic patients. The reaction to ultraviolet light was also studied and in 61 per cent of the cases was found to be more intense in areas where partial degeneration of the nerves had occurred. This reactin was not influenced by histamine, prostigmine, or atropine. E. Kailin.

Ethylene Disulphonate and Sterile Distilled Water Controls in the Treatment of Children's Allergies. Archibald, H. C.: Arch. Pediat. **62**: 219, 1945.

A group of forty-five allergic children suffering from hay fever, asthma, or eczema was studied. The patients were divided into three groups. Group I, consisting of eighteen children, received ethylene disulphonate; Group II, consisting of eighteen children, received distilled water; and Group III, consisting of nine children, received first ethylene disulphonate and later sterile distilled water after the symptoms had recurred. For the most part, the patients were unselected and no other treatments were used except for the administration of epinephrine, ephedrine, and propadrine. A patient received an injection of 2 c.c. of ethylene disulphonate. If the symptoms persisted, the injection was repeated after an interval of nine weeks according to the manufacturer's recommendations. The results of these studies indicated that ethylene disulphonate was no more efficacious than other forms of nonspecific therapy, such as milk, peptone, vaccines, or distilled water. The author found no justification for the use of ethylene disulphonate in the treatment of children's allergies. A.

Pathology of Anaphylaxis Due to Sulfonamide Drugs. Black-Schaffer, B.: Arch. Path. **39**: 301, 1945.

The literature dealing with the concept of sulfonamide sensitivity is discussed, and previous pathologic reports are reviewed. The pathologic studies of five cases in which these drugs contributed to the fatal outcome are reported. In general, two related lesions were noted, i.e., arterial changes and generalized cellular exudates. The arterial lesions differed in appearance, but all reflected a linear progression from a simple edema to frank necrosis. The basic lesion was a necrotizing fibrinoid arteritis of the smaller vessels. The cellular exudate was monocytic in composition. The reticulo-endothelial system was hyperplastic. The author suggests that the observed phenomenon may be the morphologic expression of a response to "foreign cells" (conjugated sulfonamide group to blood cells). The available evidence suggests that the nephrosis in cases of sulfonamide hypersensitivity is an expression of an "anaphylactic" renal reaction. Interstitial myocarditis was found in all cases. H.

Periarteritis Nodosa-Like Lesions in Rats Fed Thiouracil. Marine, D., and Baumann, S. J.: Arch. Path. **39**: 325, 1945.

The literature on the occurrence of periarteritis nodosa lesions in animals is reviewed. Typical periarteritis nodosa lesions were observed in three of eighty white rats who receive prolonged feedings of thiouracil. Healed lesions were noted in one animal. The lesions were confined to the mesentery of the small intestine and colon, to the pancreas and postpancreatic region. If the lesions of periarteritis nodosa are considered to be a manifestation of hypersensitivity, the rather high incidence in this series of animals is considered paradoxical since it is extremely difficult to sensitize rats with most antigens. H.

On the Relation of the Thyroid to Allergic States. Epstein, A. A.: J. Mt. Sinai Hosp. **12**: 191, 1945.

The endocrine dysfunctions most commonly associated with allergic states are related to the thyroid gland. Four cases are cited which demonstrate the association of asthma with hyperthyroidism. In each instance, treatment of the

thyroid condition had a favorable effect upon the asthmatic state. In the author's experience, asthma is more frequently associated with hyperthyroidism than with hypothyroidism. Another type of allergic reaction associated with hyperthyroidism may be intestinal disturbances (mucous colitis?).

A case cited is that of a young, white male patient, who was known to be milk-sensitive and who had a bowel disturbance of many years' duration. He had frequent bouts of diarrhea alternating with constipation. The basal metabolic rate was +23 per cent. Treatment of the thyroid state afforded complete relief of the intestinal symptoms.

Certain types of allergic conditions such as angioneurotic edema, hay fever, and urticaria are more commonly associated with hypothyroidism. Three illustrative cases are cited. Treatment of the hypothyroid state had a beneficial effect upon the associated allergic disturbance. In addition to the hereditary factors which play a role in allergic conditions, there may be an associated hereditary predisposition to thyroid dysfunction and the hyperactivity of tissue due to thyroid disturbances may precede or form the basis for allergic sensitization. There may be no evidence of thyroid dysfunction during the active allergic state but later on the thyroid factor may become predominant. A.

Reactions to 10,000 Pooled Liquid Human Plasma Transfusions. Miller, E. B., and Tisdall, L. H.: J. A. M. A. **128**: 863, 1945.

An analysis of 10,000 questionnaires concerning reactions following the use of pooled liquid human plasma revealed that thermal and allergic reactions were the ones most frequently encountered. Hemolytic reactions were not noted after any of the transfusions. A careful cleansing of all apparatus tends to prevent thermal reactions. In the 10,000 cases reviewed, there were a total of two hundred ninety-six reactions to which one hundred five (34.2 per cent) were of the allergic type. Of this number, one hundred two were urticarial and three were asthmatic. All responded satisfactorily to small doses of epinephrine. Three possible mechanisms which underlie these allergic reactions are: (1) transfer of food ingested by the donor, to which the recipient is sensitive, (2) passive transfer of sensitivity, and (3) sensitivity to common normal substances in the plasma. Although a small number of the allergic reactions can be avoided by proper selection of donors who should be on a semifasting diet for six hours previous to the blood donation, the majority, which are due to the normal substances in the plasma, are unavoidable. F.

A Clinical Study of Sensitivity to Sulfathiazole. Kent, G. T., and Diefendorf, H. W.: Am. J. M. Sc. **209**: 640, 1945.

Of four hundred seventy-two patients who received a primary course of sulfathiazole therapy, one hundred ten developed some form of reaction to the drug. Of the one hundred ten reactions, forty-six were allergic in nature. Drug fever occurred in practically all cases showing any type of sensitivity reaction and was taken as an index of allergic response to the drug. The highest incidence of drug fever occurred on the ninth day of therapy. Of one hundred three patients receiving a second course of sulfathiazole after an interval of from two to one hundred eighty days, twenty-two manifested sensitivity reactions. In this group, drug fever developed by the second day in those cases who had had drug fever during the first course. However, 75 per cent of the patients with drug fever during the second course had had no reaction in the first course and none of these developed their fever before the ninth day from the time the second course was started. This marked resemblance to serum sickness suggests the allergic nature of drug sickness. Neither the absolute interval between courses nor the dosage has any influence on the production of sensitivity reactions. F.

A Severe Systemic Reaction to a Bee Sting. Obermayer, M. E.: Arch. Dermat. & Syph. **51**: 6, 1945.

A severe systemic reaction developed within ten minutes following a bee sting on the plantar surface of the great toe. The first symptoms noted were

tingling and stiffness of the palms. Then followed numbness and edema of the lips and tingling over the scalp, in the axillae, and about the genitals. Within thirty minutes malaise, abdominal cramps, and angioneurotic edema of the eyelids and lips developed. Generalized urticaria, intense pruritis, and a tightness of the chest followed. Examination of the site of the sting showed a tiny puncture wound and some edema of the toe. An injection of epinephrine produced almost complete relief within twenty minutes. However, there was a recurrence of urticaria and abdominal cramps within an hour or two. The nature of the allergenic substance is discussed. A

Anaphylaxis

Inhibitory Effect of Glycogen Upon Anaphylactic Shock in the Rabbit. Rocha e Silva, Grana, A., and Porto, A.: Proc. Soc. Exper. Biol. & Med. **59**: 57, 1945.

It has been previously demonstrated that hydatid fluid produces a marked reduction in rabbit blood histamine and in the leucocyte count. The fall in blood histamine seemed to depend on a decrease of platelets. It has also been found that an anaphylaxis-like reaction can be produced in dogs and guinea pigs by the injection of a specially prepared *Ascaris* extract. This extract produces a sharp fall in blood histamine, leucopenia, and a disappearance of platelets from the blood in the rabbit but fails to produce shock. Chemical fractionation revealed that a glycogen-like material in the *Ascaris* extract is responsible for these effects.

In the present studies, it was found that the intravenous injection of glycogen into rabbits produces a marked reduction in platelets, in the histamine content of the blood, and in the leucocyte count. The carotid blood pressure remains unchanged despite the drop in the histamine content of the blood. However, in vitro experiments showed that the addition of liver glycogen or ascaris glycogen to rabbit's blood failed to produce a shift of histamine from the cells to the plasma, such as occurs ordinarily in anaphylactic shock.

In another series of experiments on rabbits sensitized with horse serum, varying amounts of glycogen were injected at various time intervals before and after administration of the shocking dose of antigen. When an adequate amount of glycogen was injected five to ten minutes before the shocking dose the blood histamine, the leucocytes, and the platelets were markedly reduced, and shock did not occur. When an insufficient amount of glycogen was injected one or two minutes before the shocking dose, the shock which occurred was milder or unaffected. When glycogen was administered after the shocking dose the resulting shock was unaffected or aggravated. It was concluded from these studies that histamine is bound to platelets in rabbit blood. Anaphylactic shock in the rabbit appears to be due to the clumping of leucocytes and platelets in lung capillaries and small vessels. Glycogen inhibits anaphylactic shock in the rabbit by dispersing the blood elements without a preferential allocation of these in the shock organ. A.

Shock Produced in Dogs by Hydatid Fluid. Rocha e Silva, M., and Grana, A.: Am. J. Physiol. **143**: 306, 1945.

Hydatid fluid from sheep, calf, and pig, when injected intravenously into dogs, produces shock symptoms. Reinjection of the same dose, after the animal recovers, fails to produce shock symptoms. Decreased blood coagulability has been observed during shock. The shock-producing properties of hydatid fluid are not destroyed by boiling and prolonged dialysis. Deproteinization with trichloracetic acid and prolonged dialysis to remove the acid have little effect on the shock-producing factor. No apparent relationship was noted between the histamine content of the blood and the degree of shock symptoms. The authors conclude that histamine is not a factor in this type of shock. H.

Miscellaneous

The Importance of Proteins in Resistance to Infection. Cannon, P. R.: J. A. M. A. **128**: 360, 1945.

The influence which protein metabolism has upon resistance to infection is reviewed. It is pointed out that all pathogenic organisms are foreign proteins, and, therefore, from the standpoint of the host, resistance to them as basically a problem of protein digestion. Effective resistance appears to be dependent upon phagocytosis and/or the production of antibodies, both of which processes are largely influenced by adequate protein reserve. Old age or prolonged undernutrition results in loss of protein reserves thereby causing a reduction in the number of potential phagocytes which are derived from mesenchymal tissues. A direct relationship exists between the amount of protein intake and the degree of phagocytic activity and of antibody formation. Specifically acquired resistance to a wide variety of potentially pathogenic microorganisms represents a type of biologic adaptation which conditions a child in the early years to many clinical and subclinical infectious experiences. The resultant immunity tends to persist, to be reawakened or restimulated in the course of later infections (the anamnestic response). The persistence of this antibody producing capacity may be explained by the supposition that a protein matrix exists within the tissues from which antibodies arise and, in the course of their fabrication, the antigen unites with this matrix to form a common unit. The matrix is composed of the globulin from which is derived the antibody globulin of immune serum. Current views assume that antibody globulin in the blood serum is actually normal serum globulin which has been altered because of its configurational relationship to antigen. In accordance with this view, antibody production should be influenced by the same conditions which determine globulin production; moreover, since globulin production is dependent upon amino acid supply, antibody production must depend on protein intake. No specific food constituent or vitamin has been found which can enhance natural resistance, but poor nutrition is known to decrease resistance. Hypoproteinemia, along with increased susceptibility to infection, are two of the outstanding clinical findings in prolonged starvation. Hypoproteinemia may be manifested as either hypoalbuminemia or hypoglobulinemia. Impairment of either metabolism is commonly overlooked because it is so difficult by ordinary methods to demonstrate the gamma globulin, which is of significance from the standpoint of antibody production. The alpha and beta fractions of globulin may be increased in certain conditions, whereas the antibody-containing gamma portion may be considerably reduced. Gamma globulin is a highly complex substance containing at least five of the eight amino acids considered essential for the maintenance of nitrogen equilibrium and at least two of the additional amino acids which are necessary for normal human function. Such a complex substance can only be synthesized if these amino acids are available; it is obvious that such a synthesis could not occur under conditions of a prolonged protein deficiency. The antibody producing power can, however, be quickly restored by the ingestion of adequate amounts of high quality protein. F.

Denatured Egg Albumin. I. The Preparation and Purification of Crystalline Egg Albumin Denatured in Various Ways. MacPherson, C., and Heidelberger, M.: J. Am. Chem. Soc. **67**: 574, 1945.

Techniques are described for denaturing hen egg albumen without degradation by heat, hydrochloric acid, trichloroacetic acid, or alkali. The criterion for denaturation is the insolubility, at the isoelectric point, of denatured egg albumen derived from isoelectrically soluble egg albumen. The protein is considered to be degraded when nitrogenous or sulfur-containing portions are split off the labile molecule. A salt concentration above a maximum of 0.02 N or the maintenance of denatured albumen in isoelectric suspension more than sixteen hours were contributory to degradation. Degraded albumen had a decreased sensitivity to salt or to standing in the isoelectric state. Evidence is presented which indicates that a small fraction of acid-denatured egg albumen which has aged two or three days may revert to egg albumen. Longer aging does not result

in further yield of egg albumen. When trichloroacetic acid-precipitated egg albumen is redissolved and isoelectrically precipitated, 4 to 10 per cent of the total protein is always present in the supernatant as egg albumen. E. Kailin.

Immunochemical Properties of Native and Denatured Horse Serum Globulins. Erickson, J. O., and Neurath, H.: J. Gen. Physiol. **28**: 421, 1945.

Antibody globulin, specifically precipitated with pneumococcus polysaccharide from Types I and II antipneumococcal horse serum concentrate, and pseudoglobulin from normal horse serum were denatured by guanidine hydrochloride. The molecular weight of the globulin was halved by this procedure, and the resulting precipitate was irreversibly insoluble in saline and in most buffer solutions. The precipitate was soluble to a limited extent in 2 per cent sodium sulfocyanate which further decreased the molecular weight. Qualitative precipitin tests showed that the severely denatured antibody globulin still reacted strongly with Type I polysaccharide. The sodium sulfocyanate interferred markedly with quantitative precipitin determinations. Rabbit antisera to normal and denatured antibody globulin and to nonimmune normal and denatured horse globulins were prepared. The relative antigenicity of these globulins was compared by precipitin tests. Control sera taken from the rabbits prior to immunization showed no precipitins. No significant difference was found in the antigenicity of the degraded proteins as compared to that of the unaltered proteins. In all previous studies horse serum albumin had diminished in antigenicity upon denaturation. Cross-reactivity studies as determined by precipitin tests with heterologous antigens led to the conclusion that the native and denatured antibody globulins are more closely related to each other than they are to the corresponding fractions of normal globulin and vice versa.
E. Kailin.

The Prognostic Value of Marrow Eosinophiles in Thrombocytopenic Purpura. Schwartz, S. O.: Am. J. M. Sc. **209**: 579, 1945.

Thirty cases of the primary type of thrombocytopenic purpura were studied on the basis of the bone marrow eosinophile counts. It was found that these cases could be divided into two groups, one of which showed an increased number of eosinophiles in the marrow. In cases with the high eosinophile count, the prognosis was excellent for complete hematologic and clinical recovery and splenectomy was unnecessary. No correlation between the blood and marrow eosinophile counts was noted. It is suggested that the high marrow count is a manifestation of an allergic state of which the thrombopenia is merely a symptom. Bacteria, foods, and drugs may be the offending agents. With a low marrow eosinophile count, splenectomy is necessary. It is believed that the thrombopenia is precipitated in allergic individuals by the action of a trigger mechanism and that the clinical symptoms represent a "summation" effect. F.

Eosinophilia Following Parenteral Liver Therapy. Literature and Case Report. Hanno, H. A., and Mensh, M.: Am. J. M. Sc. **209**: 572, 1945.

A patient who was receiving intramuscular doses of liver extract developed marked eosinophilia. The patient gave a history of frequent attacks of urticaria during childhood and adolescence, but had no other history of allergy. No allergic manifestations accompanied the eosinophilia. This type of eosinophilic response is not infrequently seen after the oral administration of liver but is rare after parenteral therapy. The authors do not consider this unusual response allergic in nature. F.

Allergy Abstracts

Asthma and Hay Fever

Inhalation of Penicillin Aerosol in Patients With Bronchial Asthma, Chronic Bronchitis, Bronchiectasis and Lung Abscess. Preliminary Report. Barach, A. L., Silberstein, F. H., Oppenheimer, E. T., Hunter, T., and Soroka, M.: Ann. Int. Med. **22**: 485, 1945.

A solution of forty to fifty thousand units of penicillin in 1 ml. of normal saline was administered by inhalation four or five times daily to patients with various types of pulmonary pathology. A blood level of 0.01 to 0.04 units per milliliter was attained in most patients within fifteen to sixty minutes after inhalation. Urinary excretion of from 10 to 20 per cent of the amount inhaled occurred within twenty-four hours. High blood levels were obtained when patients breathed deeply and held their breath for several seconds at the end of each inspiration. Any commercial nebulizer which dispersed the solution in particles of 1 micron or less in diameter was found to be satisfactory. A special type of nebulizer, which delivered aerosol during inspiration only, was used in these studies.

Twenty patients with pulmonary and bronchial infections were given an average of two hundred thousand units of penicillin daily for an average period of ten days. Of these, three with bronchial asthma and bronchitis, one with lung abscess, one with bronchiectasis, and ten with emphysema and pulmonary fibrosis were benefited. Five patients with closed lung abscess, bronchiectasis, and pulmonary fibrosis were not relieved. H.

Inhibition of Pollen Production in Ragweed by the Use of Chemical Sprays. Grigsby, B. H.: Science **102**: 99, 1945.

Di-nitro-secondary-butyl-phenol (G-412) in kerosene applied as a spray at 100 pounds' pressure at a rate of 100 gallons per acre gave a complete kill of ragweed within six hours. Penta-chlor-phenol (G-410) gave a 75 per cent kill in twelve hours, and no further pollination occurred. Sinox in kerosene killed flower spikes, but new auxilliary buds developed. Kerosene alone killed flowers that were ready to open, but the plants recovered and pollinated. Most of the materials used are also toxic to cultivated crops. E. Kailin.

Is Oral Pollen Therapy Dependable? Thiberge, N. F.: South M. J. **38**: 523, 1945.

Artificial gastric digestion of ragweed pollen either diminished or oblitered its skin-reacting capacity. Twenty-three of twenty-nine ragweed-sensitive patients tested with digested pollen showed negative skin reactions to it. Of eighty-two patients treated with enteric coated pills of ragweed or grass pollen for one or two seasons, thirteen were completely relieved of symptoms, thirty-seven were improved, and three were made worse. These results compared favorably with those obtained following parenteral therapy.

Cutaneous sites on fourteen normal individuals were sensitized with sera obtained from ragweed-sensitive patients. Two weeks later the subjects received enteric coated pills containing ragweed pollen. Positive absorption reactions occurred in four individuals, one showed a doubtful reaction, and nine were negative. It was concluded that oral pollen therapy in the form of enteric coated pills is effective and may be advantageously used as a supplement to parenteral pollen therapy or in patients who cannot avail themselves of parenteral treatment. A.

Transient Focal Pulmonary Edema. Peirce, C. B., Crutchlow, E. F., Henderson, A. T., and McKay, J. W.: Am. Rev. Tuberc. **52**: 1, 1945.

Although roentgenographic evidence suggests that the lesions in Loeffler's syndrome are probably due to peritruncal or interstitial edema, transient focal pulmonary edema is a more likely explanation for the patho-physiologic basis of the condition. A study of the case histories presented in the literature and of cases observed by the authors suggests an allergic background for the condition. The syndrome often resembles periarteritis nodosa. The physical signs and laboratory findings are sometimes suggestive of pulmonary tuberculosis, but there are certain differential factors such as location, extent, and texture of the lesions. The amorphous character of the individual lesions, the rapid migration from one portion of the lung to another without the use of connecting pathways, and the short duration of the condition are also distinguishing features. F.

Allergy to Tobacco Smoke. Pipes, D. M.: Ann. Allergy **3**: 277, 1945.

In a series of 370 consecutive allergic patients, 35 (9 per cent) gave a history of initiation or aggravation of their allergic symptoms by tobacco smoke. Forty-seven (13 per cent) showed positive skin reactions to tobacco smoke extract. In nineteen patients, there was a correlation between the positive skin reactions and the clinical history. Skin tests performed with tobacco smoke on ten normal subjects were negative.

Passive transfer studies with tobacco-sensitive and tobacco-smoke-sensitive sera showed that tobacco extract and tobacco smoke extract do not completely desensitize sites to each other. It was concluded that allergy to tobacco smoke may be a distinct entity, exclusive of allergy to tobacco. It is suggested that extracts of both tobacco and tobacco smoke be employed in routine testing. A.

Military Aspects of Allergic Rhinitis. Blank, P., and Levitt, H.: Ann. Allergy **3**: 113, 1945.

From June 1, 1941, to Dec. 31, 1943, 741 men with allergic rhinitis were seen in the Allergy Clinic at Fort Eustis, Virginia. This is an incidence of 6.3 cases per 1,000 men, but does not include mild cases who did not report for treatment. Severe cases were presumably screened out at the time of induction into the service. Uncomplicated ragweed hay fever occurred in 303 men, 41 per cent of the 741 patients. Ten of the 303 patients showed no skin sensitivity to ragweed, but did have positive nasal or opthalmic reactions. Of the complicated ragweed cases, 22 men had perennial rhinitis, 17 had ragweed asthma, and 22 had mild perennial asthma. Sixty patients had both grass and ragweed hay fever. Uncomplicated grass hay fever occurred in 75 men.

Of 155 patients with perennial rhinitis, almost all had an inhalant etiology. Foods were found to be the sole etiological factor in only twelve cases. In the group with perennial rhinitis, 32 had nasal polypi.

Some special offenders among military personnel are tent dusts, newspaper dust, sawdust, rabbit and wool linings of flying jackets, kapok linings in some types of planes, kapok in life preservers on transports, and pet mascots.

E. Kailin.

Dermatology

Group Specificity of Epidermal Allergy to Procaine in Man. Rothman, S., Orland, F. J., and Flesch, P.: J. Invest. Dermat. **6**: 191, 1945.

A series of studies were performed on a 26-year-old dentist with an epidermal sensitivity to procaine, which was manifested by itching, erythema, edema, and vesiculation. Patch tests with 2.5 per cent aqueous solutions of procaine hydrochloride, procaine borate, and procaine butyrate produced vesicular reactions. Tests were then performed by the "drop method" in which a drop of solution was allowed to remain on the skin for exactly five

minutes and then was removed with a blotter. Since the results obtained with this technique were more constant than those obtained with the usual patch tests, the "drop method" was employed in all subsequent experiments. The reactions were read in twenty-four hours. Tests were performed with the two compounds forming the ester, procaine: namely, the acid, para-aminobenzoic acid and the alcohol, beta-diethyl-aminoethanol. Negative results were obtained. Since free acid groups are of importance in immunologic specificity, the esters of para-aminobenzoic acid up to C_5 were tested, with negative results. Four aliphatic compounds, all containing a tertiary amine, which is present in procaine, were also tested with negative results. A number of anesthetics lacking an aromatic amine group, such as is present in procaine, but containing a tertiary amine in the side chains, also yielded negative reactions by the "drop method." It was determined that, in order to obtain a positive skin reaction in procaine-sensitive patients, the amine group must not only be present on the benzene ring but must be in the para position. Positive reactions were obtained with only five compounds, all local anesthetics: namely, pontocaine, monocaine, butyn, tutocaine, and larocaine. Negative results were obtained with benzoic acid, anilin, phenol, para-aminophenol, para-phenylenediamine and para-amino-meta-hydroxybenzoic acid-methyl ester. Passive transfer antibodies for procaine could not be demonstrated. It was concluded that group specificity to procaine in man follows a pattern similar to that found in serologic immune reactions, in spite of the fact that this type of epidermal hypersensitiveness is not accompanied by antibodies in the serum. A.

The Pathogenesis of Atopic Eczema. Simon, F. A.: South. M. J. **38**: 530, 1945.

Assuming that human dander is an important etiological factor in atopic eczema, the author discusses the pathogenesis of eczema. The hematogenous distribution of allergen is questioned, since typical lesions of eczema may be produced by rubbing human dander on uninvolved skin areas of eczematous children, while the intracutaneous injection of the same material fails to reproduce the lesions. The tendency of atopic eczema to favor certain areas, such as the cubital spaces, cannot be explained on the basis of increased specific sensitivity of these areas, since responses to patch and scratch tests with human dander, egg, wheat, and ragweed pollen in different areas varied only slightly. However, such predilections may be the result of proximity of certain areas of the skin to the scalp, and of factors favoring accumulation, solution, and penetration of dander. Injury, such as scratching, which breaks the barrier formed by the cornified layer of epidermis facilitates the penetration of the allergens. The fingernails, which are usually contaminated with dander, not only injure the skin but also inoculate it with the allergen. Human dander was found to be soluble in physiologic saline, but insoluble in ether or alcohol. Since this allergen is water-soluble, sweat favors cutaneous penetration. Urticarial reactions to foods, inhalants, and even to human dander which are frequently associated with atopic eczema may be coincidental and irrelevant from an etiological standpoint. Conclusive evidence that foods are important allergenic excitants of atopic eczema is lacking. However, foods may play an etiological role in those cases in which positive eczematous reactions are obtained to patch tests with these allergens. A.

Studies on Eczematous Sensitizations. The Specificity of the Sensitization From the Point of View of Chemical Configuration. Rostenberg, A., and Kanof, N. M.: J. Invest. Dermat. **6**: 210, 1945.

Individuals were sensitized artificially and were then tested with chemically related substances in order to determine the degree of specificity of the induced sensitivity. Subjects sensitized with 2:4 dinitrochlorobenzene reacted to other isomers of this compound. Isomers which had substitutions in the 1:2:4 positions, such as 2:5 and 3:4, yielded the highest number of reactors, while those which differed the most from the original sensitizing compound, such as substitutions in the 3:5 positions, yielded the least number of reactors. Substitu-

tion compounds with a different halogen on the benzene ring, such as iodine or bromine, reacted as well as the parent compound. However, compounds with wider alterations, such as one in which an amino group was substituted for the chlorine atom or in which one of the nitro groups was dropped to yield a nitrochlorobenzene either in the ortho or para position, failed to elicit reactions in subjects sensitive to the original compound (2:4 dinitrochlorobenzene). It was also demonstrated that an increase in the concentration of some of the compounds resulted in an increase in the percentage of reactors, except when profound alterations in the molecule resulted in a failure to elicit reactions regardless of the concentration. It was concluded that there was a high degree of specificity in the eczematous type of sensitization and that this specificity is determined by the geometric configuration of the compound and by its capacity to form certain conjugates. A.

Chemistry of Palmar Sweat, Preliminary Report: Apparatus and Techniques. Lobitz, W. C., and Osterberg, A. E.: J. Invest. Dermat. **6**: 63, 1945.

A technique for collecting palmar sweat is described. The chloride levels of plasma, urine, and sweat were compared. The sweat gland was found to be capable of concentrating sweat chloride to a degree comparable to renal concentration. Data were collected on seven normal and on six atopic individuals. A considerable individual variation was noted in the excretion of sodium chloride in sweat. In the palmar sweat of patients with atopic dermatitis the pH tended to be slightly higher, the volume to be slightly greater, and the chloride concentration to be lower than in that of normals. E. Kailin.

Allergic Reactions to Penicillin. Barker, A. N.: Lancet **1**: 177, 1945.

Two cases with cutaneous reactions to penicillin were observed. One patient developed urticaria on the fifth day of penicillin treatment. The urticaria persisted for four weeks. A scratch test with penicillin produced a local urticarial reaction within one-half hour which persisted for twenty-four hours. Control tests with autoclaved penicillin were negative. In the second case, pruritus of the hands and face was followed in a few days by an acute, severe dermatitis of the face and neck. This patient had been handling penicillin solution for seven months. The acute dermatitis cleared on cessation of contact with penicillin. Patch tests with 20,000 units per milliliter produced strong positive reactions within twelve hours. Pigmentation at the site was still present two weeks later. Control tests with autoclaved penicillin were negative. H.

Effects of Tetryl. Probst, E. W., Mund, M. H., and Lewis, L. D.: J. A. M. A. **126**: 424, 1944.

A survey was made of about 850 employees in an arsenal where tetryl was handled. Periodic monthly examinations revealed that 4 per cent of the workers had dermatitis and that, in 62 per cent of these, the dermatitis was caused by tetryl. The highest incidence was among individuals in close contact with tetryl. However, several guards who patrolled tetryl areas developed severe dermatitis. One clerk handling reports from a tetryl area did not recover from her dermatitis until the reports emanating from this area were discontinued. Age, sex, and color were not etiological factors. In most cases, the dermatitis began in new workers after a week or two of exposure. Some were said to have started immediately after the first exposure. Only the exposed surfaces of the skin were affected. Many workers who responded to symptomatic therapy were eventually able to return to their previous jobs. The mucous membranes of the nose and throat were dry and injected. A few patients had engorged nasal mucous membranes and vasomotor rhinitis. Recovery ensued when the exposure ceased. Dermatitis of the eyelids was common, but the eye itself was not damaged. Hearing was unimpaired. There was no unusual incidence of headaches. No systemic illness developed. E. Kailin.

Dermatitis From Wearing Apparel. Schwartz, L., and Peck, S. M.: J. A. M. A. **128**: 1209, 1945.

Articles of wearing apparel and materials which have been reported as common causes of dermatitis are silk, wool, synthetic fibers, leather, artificial leather, fur, rubber, dress shields, girdles, socks, pajamas, and brassieres. Metal, metal alloys, and plastics also are common offenders. Investigations have shown that the chemicals employed in the processing of the fabrics, rather than the raw materials themselves, are the commonest causative agents. Among these are the plasticisers, stabilizers, accelerators, antioxidants, and finishes. Fabric dyes do not, as a rule, cause dermatitis unless the wearer has idiosyncrasy to the dye or unless the dyeing process has been faulty resulting in the retention of irritant chemicals in the fabric. Dye intermediates are more likely to cause dermatitis than the finished dyes. The heat of ironing may sometimes break down a dye into its intermediates. Sensitivity to fur dyes and mordants is a more common cause of dermatitis than fur sensitivity. Proper dyeing processes which prevent the leaching out of the dye reduce the incidence of dermatitis.

Dermatitis caused by wearing apparel is easily recognizable. The eruption begins at the point of contact usually five days or more after the garment has been worn. During this period the sensitivity develops. In the presence of sensitivity, this period is naturally shortened. Patch tests are the most practical means of demonstrating the cause of contact dermatitis. Good technique in patch testing is important and varies with the different types of materials. The techniques to be employed for various materials and the interpretation of the results are described in detail. **F.**

Dermatitis From Dehydration of Potatoes. Peck, S. M., and Clare, H. C.: Arch. Dermat. & Syph. **52**: 9, 1945.

Dermatitis of the hands occurred in a number of workers employed in potato dehydrating plants. Most cases developed among the workers engaged in trimming the peels from the potatoes. In this operation the hands were constantly wet by water and potato juice. The lesions were limited to the hands and usually developed within two weeks to a month after beginning this type of work. Redness, scaling, and, in a few cases, vesicles involved the fingers with occasional maceration of the skin on the rest of the hand. In the most severe cases, there were dryness, redness, and scaling of the palms with the formation of fissures. Patch tests with slices of cooked and uncooked potato were negative. Culture of the vesicle fluids was negative except for *Monilia albicans* in one patient. **A.**

Sensitivity to the Oral Administration of Castor Oil. Blank, P.: Ann. Allergy **3**: 297, 1945.

A case of dermatitis medicamentosa following the oral administration of castor oil is reported. The patient was a white man, aged 23 years, with a negative personal and a positive family history for allergy. He experienced marked generalized abdominal cramps within twenty minutes after the administration of 1 ounce of castor oil. Within two hours, the tongue and fauces were red and edematous and shortly thereafter marked flushing of the face and a scarlatiniform rash over the neck and shoulders developed. Edema of the eyelids, lips, ears, and fauces and a severe stomatitis followed. The patient finally developed a mild conjunctivitis, rhinorrhea, a punctate vesiculopapular rash over the neck and shoulders, and a generalized erythema. Twenty hours after admission to the hospital, the symptoms had subsided considerably, and within forty-eight hours desquamation of the skin of the entire body had started. Within four days, the patient made a complete recovery. A few days later following the ingestion of 4 c.c. of castor oil, there was a recurrence of all the previous symptoms. Three weeks later, following the administration of 1 c.c. of castor oil, there was again an exacerbation of the sympotms but in a much milder form. A scratch-patch test with castor oil showed only a slight reaction. A patch test with castor oil was negative. **A.**

Is Penicillin a Photosensitizing Agent? Canizares, O.: Arch. Dermat. & Syph. **52**: 17, 1945.

Twenty-four hours following the administration of penicillin therapy for the treatment of gonorrhea, the patient took a sun bath. That night an erythema was observed on the exposed areas. This subsided within three days but a morbilliform eruption appeared on the more severely sunburned places. The lesions became more profuse but remained localized to the exposed areas. The patient stated that he had received sulfonamide therapy fifteen days previous to the penicillin and that he had taken three sun baths shortly thereafter without untoward effects. Since the blood showed no residual sulfadiazine, at the time of the administration of penicillin, it was suggested that penicillin might be a photosensitizer.

Severe Light Hypersensitiveness Cured by Cholecystectomy. Urbach, E., and Shay, H.: Ann. Allergy **3**: 124, 1945.

A case of severe light dermatitis of nine years' duration is reported. It was found that the patient was sensitive only to the ultraviolet part of the spectrum. She also suffered from cholelithiasis. Following cholecystectomy her light sensitiveness improved and, after three months, it disappeared. For the past four years she has been free of symptoms. The stool content of porphyrin, which was slightly elevated prior to operation, is now normal.

E. Kailin.

Otorhinology and Ophthalmology

Vascular Response of the Nasal Mucosa to Thermal Stimuli and Some Observations on Skin Temperature. Ralston, H. J., and Kerr, W. J.: Am. J. Physiol. **144**: 305, 1945.

A constantan-copper thermocouple was used to measure temperatures of the skin and of the anterior parts of the inferior turbinate mucosa. Changes in volume of nasal chambers were measured with a rubber balloon. The thirty-seven patients studied included some who were cold resistant (less than one cold a year), others with two, three, four, and more colds a year, and patients with allergic rhinitis, atopic dermatitis, and gastrointestinal allergy.

Local cutaneous chilling was characteristically followed by a drop in nasal temperature with a substantial return within a few minutes. Local cutaneous warming was followed by a transitory reflex temperature drop, which was generally followed by a permanently elevated nasal temperature as long as the stimulus was applied. No difference was observed between the temperature reactions of hypersensitive and normal individuals. A rough parallel was noted between the nasal and fingertip temperatures. Exposure to a cold environment for twenty-seven minutes followed by the oral inhalation of amyl nitrite resulted in an elevated temperature of the nasal mucous membrane and a diminished chamber volume. The subcutaneous injection of 0.75 ml. of epinephrine was followed by a pronounced drop in the nasal temperature with shrinkage of the nasal mucous membranes and an increase in the nasal chamber volume. Hypersensitive and normal individuals showed no difference in reactions in these latter experiments. C.

Nasal Congestion From Frequent Use of Privine Hydrochloride. Feinberg, S. M., and Friedlaender, S.: J. A. M. A. **128**: 1095, 1945.

Privine hydrochloride nose drops cause a rebound congestion of the mucosa. The authors observed at least seventy-five patients whose nasal congestion was aggravated or maintained by privine. Relief from symptoms followed withdrawal of the drug. The exact cause of the undesirable effect of the drug has not been definitely established, but it may be due to one of the following: (a) the presence of a vasodilator substance, (b) allergy to the drug, (c) chemical irritation, or (d) a vasodilatation following an intense vasoconstriction. The authors believe the last to be the most plausible explanation. C.

Miscellaneous Allergies

A Study of the Type of Hypersensitivity Induced by Penicillin. Rostenberg, A., and Welch, H.: Am. J. M. Sc. **210**: 158, 1945.

Of 144 persons who were injected intracutaneously with 0.1 c.c. of a solution of penicillin sodium containing 1,000 units, eight (5.5 per cent) exhibited a tuberculin type of reaction. Nine individuals were given 1,000 units of commercial penicillin intracutaneously in each of ten sites. This procedure was repeated twice at five-day intervals. Two of these subjects reacted after the second series, one with a flare, and the other with an urticarial reaction. In the serum of the latter patients reagins or precipitins could not be demonstrated. Eight of the subjects were given a third set of injections. Four developed an erythema around the injected sites within fifteen to thirty minutes. Wheals developed in two subjects. The remaining four showed, in addition to the erythema, a "flaring" of old injection sites. Patch tests with penicillin, precipitin, and passive transfer studies were negative. Skin tests with a suspension of *Penicillium notatum* performed on five individuals who exhibited a tuberculin type of sensitivity to penicillin were negative. It is apparent that a form of sensitivity to crystalline penicillin sodium exists in patients who have had no previous contact with the drug. It is assumed that there had been a contact with an immunologic equivalent. F.

Polyneuritis Following Sulfanilamide Therapy. Mueller, R.: Acta. med. Scandinav. **121**: 95, 1945.

Approximately one hundred cases of polyneuritis following sulfonamide treatment have been reported. Seven cases observed by the author have been carefully studied. In these cases, polyneuritis occurred following the use of uliron (sulfanilyldimethylsulfanilamide), sulfanilamide, sulfathiazole, and sulfapyridine. The polyneuritis following treatment with nonmethylated sulfa compounds was more severe than that with methylated compounds. The latter, however, occurred with greater frequency than the former. The polyneuritis was usually severe and could affect the patient for months and even for years. The lower extremities were more frequently involved than the upper. Cranial nerve signs were rare. There was no correlation between dosage and the severity of the symptoms. As little as 7 Gm. was followed by symptoms. In the majority of cases, symptoms occurred several days or weeks after treatment had been discontinued and not during active treatment. In three of the author's seven cases, polyneuritis appeared eight or nine days after a second course of treatment which followed a period without treatment. Four of the seven cases showed moderate blood eosinophilia. In one patient, the eosinophilia coincided with the onset of the polyneuritis. In one unusual case polyneuritis recurred following the administration of sulfathiazole two years after the initial episode. In this patient, an asthmatic, an associated eosinophilia of 66 per cent was noted. The diagnosis of periarteritis nodosa was considered. The patient died two months later but no autopsy was performed.

The author advises that methylated sulfonamides should not be used and that intermittent treatment should be avoided. A history of polyneuritis as a complication of sulfa therapy is a contraindication to further use of any sulfonamide. Although the polyneuritis may in some cases be the result of toxic damage of nerve tissue, the author believes that more frequently it is a manifestation of an allergic reaction. H.

Nontuberculous Pulmonary Calcification and Sensitivity to Histoplasmin. Palmer, C. E.: Pub. Health Rep. **60**: 513, 1945.

Many individuals with negative tuberculin reactions show pulmonary calcification suggestive of tuberculous infection. There is evidence that ascariasis, coccidioidomycosis, and histoplasmosis also produce pulmonary calcification. Infection with *Histoplasma capsulatum* was investigated in a large series of nurses. The entire group was subjected to intracutaneous histoplasmin and tuberculin tests and to roentgenographic examinations. The results indi-

cated that infection with histoplasma is common and widespread and that it is probably the principal nontuberculous cause of pulmonary calcification. Of 3,105 nurses studied, 711 (22.9 per cent) showed positive reactions and 61 (2 per cent) showed doubtful reactions to histoplasmin. Of a group of 294 nurses with calcification, 21.4 per cent showed positive tuberculin reactions. Of the remaining 231 who gave negative tuberculin reactions, 206 showed positive or doubtful reactions to histoplasmin. Twenty-five (8.5 per cent) of the group with calcification were negative to both tests. Hence, 91.5 per cent of those having pulmonary calcification reacted to histoplasmin, tuberculin, or both, and there were more reactions to histoplasmin than to tuberculin. It is concluded that a large percentage of pulmonary calcification seen in the East Central States may be caused by infection with *Histoplasma* or related organisms and not by tuberculosis. A.

Immunologic Studies in Rheumatic Fever. I. Cutaneous Response to Type-Specific Proteins of the Hemolytic Streptococcus. B. Response to "Purified M" Proteins From Forty Known Types of the Hemolytic Streptococcus—Group A. Taran, L. M., Jablon, J. M., and Weyr, H. N.: J. Immunol. **51**: 53, 1945.

Purified "M" fractions were prepared from forty known types of hemolytic streptococci. The final purified "M" preparation gave no precipitation with Group A serum, indicating that the group-specific "C" fraction had been removed. A preliminary study done on 124 children with active or quiescent rheumatic fever showed that the skin reactions resulting from tests with purified "M" fraction were considerably stronger than those with crude preparations. A retest of forty-six of this group, four months later, gave the same results as the first series of tests, indicating that the testing material was stable and that the tests did not influence subsequent cutaneous reactions in the same patient. The cutaneous reactions appeared in from eight to thirty-six hours and lasted seventy-two hours. A few cases developed vesiculation. No constitutional reactions occurred.

Eighty-nine children with a definite history of rheumatic fever were skin tested with the purified "M" fractions. Seventy were tested during the quiescent phase, and nineteen were tested during the active stage. The incidence and the degree of the cutaneous reactions were greater in the active phase of disease. Following the active phase, the reactions diminished for a period of about two years. Thereafter, the reactivity tended to increase with the age of the child. The reactivity to purified "M" fraction was greater with certain types of hemolytic streptococci than with others. E. Kailin.

Periarteritis Nodosa in Thiourea Therapy. Gibson, P. C., and Quinlan, J. T.: Lancet **2**: 119, 1945.

A patient with toxic hyperthyroidism received a total of 31.5 Gm. of thiourea during thirty-five consecutive days. Treatment was discontinued following the appearance of fever and conjunctivitis. Other symptoms which developed included jaundice, thrombosis of the left central retinal artery, scleroderma, and pigmented and purpuric rashes. The patient died two weeks later. The post-mortem diagnosis was periarteritis nodosa. The possibility that this was an allergic reaction to the thiourea, similar to that described following the use of sulfonamides, is discussed. H.

A New Product in the Treatment of Migraine. A Preliminary Report. Horton, B. T., Peters, G. A., and Blumenthal, I. S.: Proc. Staff Meet., Mayo Clin. **20**: 241, 1945.

A new drug D.H.E.–45 (dihydroergotamine) was employed in the treatment of one hundred twenty patients who had migraine. The effects of ergotamine tartrate and D.H.E.–45 were compared in the same patients. Of those who had typical migraine, 92 per cent obtained excellent or good results with D.H.E.–45 as compared with 77 per cent of those treated with ergotamine

tartrate. Results with both drugs were much better in the typical than in the atypical cases. D.H.E.–45 was found to be a safe and efficient preparation for aborting acute attacks of migraine. It was at least as effective as ergotamine tartrate and produced toxic reactions only one-third as frequently as ergotamine tartrate. No changes in blood pressure followed the use of the new drug. It produced no effect on the uterus as did ergotamine tartrate. H.

The Autonomic Nervous System in Relation to Allergy. Kuntz, A.: Ann. Allergy **3**: 91, 1945.

The state of the emotions, the hypothalamic centers, and the autonomic nervous system is discussed in relation to asthma, vasomotor rhinitis, urticaria, physical allergy, and anaphylaxis. A discharge of cholinergic impulses may be limited to a single organ or only to part of the body, a fact which may have some bearing on the involvement of a single shock organ. It has been reported that the production of "essential nonspecific antibodies" such as alexins, opsonins, and complement is increased by sympathetic and inhibited by parasympathetic stimulation. Conversely, the production of such specific antibodies as antitoxin, precipitin, and agglutinin is believed to be augmented by parasympathetic and decreased by sympathetic stimulation. At the onset of an infectious disease there is increased sympathetic tonus with inhibition of the specific immune substances, but during the later phases specific antibodies are increased as a result of increased parasympathetic tonus. The initial outpouring of nonspecific substances is believed to be related to the emergency functions of the sympathetico-adrenal system. Parasympathetic hyperactivity is accompanied by a shift in the acid-base balance toward acidity and adrenergic hyperactivity by a shift toward alkalinity. It is suggested that the allergic patient be given "ordinary alkali therapy and appropriate diet." E. Kailin.

Benign Paroxysmal Peritonitis. Siegal, S.: Ann. Int. Med. **22**: 1, 1945.

An unusual clinical syndrome characterized by recurrent paroxysms of severe abdominal pain with fever, marked malaise, prostration, nausea, vomiting, leucocytosis, and occasionally urticaria is described. Five cases are reported and described in detail. The onset of the disease in all five cases was in the second or third decade, and all the patients were males. The attacks occurred from once a week to once a month and lasted from two days to a week. Abdominal and chest pain were almost constant symptoms. Fever was a characteristic symptom, ranging from 102 to 105° F. and lasting from twenty-four to thirty-six hours. Marked prostration and malaise occurred during the acute phase. Skin manifestations were usually absent, although one patient had urticaria during the paroxysm. A rise in the total white count was noted during some attacks, but eosinophilia was absent. In two cases, however, eosinophilia was present between attacks. Allergic studies were performed in all five cases. Four gave a positive family history of allergy and one patient gave a personal history of ragweed hay fever. Skin testing gave negative results in three cases and two cases showed slight positive reactions to food. These were not regarded as clinically significant. Elimination diets and other food studies failed to reveal any causative food factors. The operative findings in one case consisted of injection of subserosal vessels of the visceral peritoneum in the lower abdominal cavity. The pathologic findings in benign paroxysmal peritonitis suggest that the syndrome is due to a vascular dilatation and hyperpermeability and that the lesion consists of some form of acute, readily reversible inflammatory reaction.

A review of the literature revealed that cases of a similar nature have been presented as examples of food allergy. The author believes that the allergic theory of the causation of benign paroxysmal peritonitis is tenable on the basis of the suggestive evidence described above. Against the allergic theory is the fact that no causative allergic factor has been discovered in any one of the cases. It is suggested, however, that operation should not be performed in such cases, until the patient has had the benefit of complete allergic study. A.

Eosinophilia With Chronic Peritonitis. Parsons, C. G.: Lancet **1**: 721, 1945.

Reports of two cases with high blood eosinophilia (28 to 60 per cent), severe spasmodic epigastric pain unrelated to meals, anorexia, and loss of weight are presented. Both patients were presumed to have tuberculous peritonitis. The presence of mild bronchial asthma in both also suggested the possible diagnosis of periarteritis nodosa. In one case, the diagnosis of tuberculous peritonitis was confirmed at the operating table. Attention is drawn to the lack of English reports on eosinophilia in tuberculosis. H.

Loeffler's Syndrome Associated With Creeping Eruption. (Cutaneous Helminthiasis). Wright, D. O., and Gold, E. M.: J. A. M. A. **128**: 1082, 1945.

Among twenty-six cases of creeping eruption, nine developed transient migratory pulmonary infiltration with a paucity of symptoms and physical signs. Blood and sputum eosinophilia were present. Skin tests with either *Ascaris* or *Trichina* extracts gave positive reactions in twenty-three of the twenty-six cases. No correlation existed between the degree of skin sensitivity and the clinical findings. F.

Anaphylaxis

The Cellular Transfer of Cutaneous Hypersensitivity to Tuberculin. Chase, M. W.: Proc. Soc. Exper. Biol. & Med. **59**: 134, 1945.

Guinea pigs were sensitized to tuberculin by subcutaneous injections of killed human tubercle bacilli suspended in paraffin oil and mixed with petroleum jelly. Several weeks later when the cutaneous reactivity to tuberculin was marked, exudates were induced by the intraperitoneal injection of paraffin oil. The peritoneal cavities of the sensitized animals were washed with heparinized Tyrode solution containing gelatin or normal guinea pig serum. The washings of several guinea pigs were combined, the sedimented cells were suspended in serum-Tyrode solutions and immediately injected into normal male guinea pigs. The recipient animals were skin tested with old tuberculin or with special tuberculoprotein preparations. Normal controls were similarly tested. A latent period preceded the development of skin sensitivity in the recipient. This period varied from two to three days after intraperitoneal injection and from twenty to thirty-six hours after intravenous injection. The duration of the transferred sensitivity was very brief. Although sensitivity was successfully transferred with washed exudate cells in sixteen out of seventeen experiments, this result could not be attained with the sera of the sensitive animals nor with cells from normal animals. In the exudates, 15 to 30 per cent of the cells were polymorphonuclear leucocytes, 20 to 35 per cent were lymphocytes, and 50 to 65 per cent were large mononuclear cells. The exudate cells could be inactivated by heating at 48° C. for fifteen minutes or by freezing. Cells from the spleen or lymph nodes of sensitized animals were also capable of transferring hypersensitiveness to old tuberculin.

It was concluded that skin sensitivity to tuberculin in guinea pigs can be transferred. A.

The Anti-Histamine Effect of Imidazol. Morris, H. C., and Dragstedt, C. A. Proc. Soc. Exper. Biol. & Med. **59**: 311, 1945.

It has been postulated that histamine owes its pharmacologic activity to its $=NH$ imine group and to its NH_2 group. The imine group acts as an anchor for the chemical receptors of the smooth muscle while the NH_2 group acts as the stimulating agent. Inhibiting compounds such as histidine, arginine, cysteine, etc., have imine but no amine radicals. By binding the chemical receptors they block the activity of histamine. Imidazole theoretically should inhibit the action of histamine, because it contains a free imine radical. In studies on guinea pig intestinal strips, employing the Schultz-Dale technique, it was found that imidazole blocked the effects of histamine when present in a ratio of 1,500:1. Imidazole did not damage the intestinal strip since the re-

sponse to histamine was restored by washing the strip. In cats, an intravenous injection of imidazole diminished but did not obliterate the depressor effect of histamine. Hence, while imidazole blocks the action of histamine, the large doses necessary to accomplish this effect renders this procedure impractical from a therapeutic point of view. A.

Antihistaminic and Antianaphylactic Activity of Some Alpha-Pyridino-Ethylenediamines. Mayer, R. L., Huttrer, C. R., and Scholz, G. R.: Science **102**: 93, 1945.

Several related pyridine derivatives were studied, and one of these, a tertiary amine, "Compound 63," was found to inhibit histamine-induced guinea pig ileum contraction at a concentration of 0.02 gamma per cubic centimeter. A histamine-aerosol air stream was found to kill control guinea pigs in 1.5 to 3.5 minutes. Guinea pigs injected with 0.1 mg. per kilogram of "Compound 63" died after two to six exposures of fifteen minutes each repeated at intervals of one hour. Guinea pigs actively sensitized with horse serum were protected from death by a subcutaneous dose of 0.1 mg. per kilogram of "Compound 63" administered ten minutes before the shocking dose. E. Kailin.

Potentiating Effect of Anaphylactic and Histamine Shock Upon Herpes Simplex Virus Infection in Rabbits. Good, R. A., and Campbell, B.: Proc. Soc. Exper. Biol. & Med. **59**: 305, 1945.

Rabbits inoculated intramuscularly and intracerebrally with herpes simplex virus suspension are rarely infected. However, when an inoculated animal was sensitized six months later to egg white and then shocked with that antigen, herpetic encephalomyelitis developed on the seventh day. In the present experiments, six rabbits were inoculated intravenously with mouse brain virus. Three of these animals had been subjected to severe histamine shock ten minutes previously. The other three animals received no preparatory treatment. The three treated animals developed encephalomyelitis and typical herpetic lesions in the brain or spinal cord. None of these lesions occurred in the three control animals. Similar results were obtained in a second series of experiments. It was concluded that histamine shock has a potentiating effect on the susceptibility of rabbits to herpes simplex virus infection and that anaphylactic shock probably has a similar effect. A.

Influence of Various Amino Acids on the Reaction of the Intestine to Histamine. Sibata, S.: Jap. J. M. Sc. **14**: 32, 1941.

Natural arginine, histidine, and cysteine counteracted the stimulating effect of histamine on the isolated guinea pig intestinal strip. Little or no inhibitory effect was produced by these amino acids on the isolated rabbit intestinal strip. H.

Miscellaneous

Size of Histamine Wheal in Relation to Dose and to Animal Species. Darsie, M. L., Jr., Perry, S. M., Rosenfeld, D., and Zaro, J. A.: Proc. Soc. Exper. Biol. & Med. **59**: 278, 1945.

Histamine diphosphate was injected intracutaneously into the shaved skins of a guinea pig, cat, rabbit, goat, dog, and man. Each animal received tests with 0.05 c.c. of a 1 per cent and of a 0.1 per cent solution of histamine and of distilled water. The reactions were read within twenty minutes. Guinea pigs, rabbits, and cats showed no whealing response to an intracutaneous injection of histamine, while dogs, monkeys, and man showed positive results. It was evident that the first three animals respond to histamine by vasoconstriction while dogs, monkeys, and man respond by vasodilatation. Cats show a decrease in blood pressure following the intravenous injection of histamine, but fail to wheal following an intracutaneous injection. In determining the relationship between wheal size and histamine concentration, a series of solutions of histamine

diphosphate containing 1, 0.1, 0.01, 0.001, and 0.0001 per cent and a distilled water control were injected intracutaneously into the shaved flanks of weaned kids (goats). The wheals were read within twenty minutes. The diameter of the wheals varied directly with the concentration of histamine with certain exceptions. When the concentration of histamine was below 0.001 per cent, the diameter of the wheal was not dependent upon the histamine concentration but was apparently due to trauma. The wheal which resulted from an injection of 0.0001 per cent histamine was not greater than that produced by the distilled water control. The variation in the size of the wheals in the lower concentrations was far greater than in the higher concentrations. In an effort to determine the effect on whealing produced by the presence of a biologic fluid which itself contained histamine-like substances (H-substance or some irritative material), various concentrations of histamine diphosphate were made using, as a diluent, physiologic saline mixed with an equal amount of the intestinal fluid of a fasting cat. These solutions were injected intracutaneously into a kid. In the presence of an extraneous histamine-like substance (intestinal fluid) which also causes whealing, histamine can be measured providing the concentration of histamine is the limiting factor. The threshold with histamine alone was 0.001 per cent but in the presence of a histamine-like substance it was raised to 0.01 per cent. It is pointed out that the proper selection of laboratory animals is of utmost importance in dermatologic experiments involving a local skin reaction.

A.

Immunologic Studies in Patients With Subacute Bacterial Endocarditis Treated by Combined Penicillin-Heparin Method. Grolnick, M., and Loewe, L.: J. Lab. & Clin. Med. **30**: 559, 1945.

Twenty-seven patients receiving intensive and prolonged treatment with penicillin failed to develop any positive skin or opthalmic reactions to a solution of penicillin containing 10,000 units per cubic centimeter. Neither did these patients develop positive skin reactions to the source of this product, the mold *Penicillium notatum.*

According to these findings, penicillin would appear to be a poor sensitizing agent. Authors' Summary.

Experimental Studies on Active Immunization With Combined Diphtheria-Tetanus Vaccine. Scheibel, I. F.: Acta path. et microbiol. Scandinav. **21**: 130, 1945.

The literature on simultaneous vaccination with several antigens is reviewed. Further studies are presented. Guinea pigs were immunized with two subcutaneous injections of diphtheria anatoxin or tetanus anatoxin or of a combination of the two. It was found that guinea pigs did not produce antibody for two simultaneously injected antigens in the same degree as they did for a single antigen. In no instance was there an increased antibody production following immunization with the combined antigens as reported by Ramon. H.

Cold Agglutinins in Tropical Eosinophilia. Viswanathan, R., and Natarjan, B.: Lancet **1**: 148, 1945.

In normal sera, cold agglutination disappears above the 1:10 dilution. High titers frequently may be found in atypical pneumonia, trypanosomiasis, and paroxysmal hemoglobinuria. One hundred five sera from sixty-one cases of tropical eosinophilia were studied. Fifty-three of these showed cold agglutination titers ranging from 1:16 to 1:2048. Twenty-seven had titers above 1:256. The significance of these findings is a matter for speculation since the etiology of tropical eosinophilia is unknown. The presence of pulmonary lesions of a miliary nature together with high cold agglutination titers suggests a similarity between this disease and atypical pneumonia. H.

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